Archives of Dermatology and Syphilology

VOLUME 19 FEBRUARY, 1929 NUMBER 2

THE RÔLE OF IDIOSYNCRASY AND ALLERGY IN DERMATOLOGY *

BRUNO BLOCH, M.D.

Professor of Dermatology and Syphilology, University of Zurich

ZURICH, SWITZERLAND

Until a short time ago, one understood that the term "allergic skin diseases" included those eruptions which occur during the course of certain infections, for example, tuberculosis or trichophytosis, when formed elements (tubercle bacilli, spores) are hematogenously distributed in an allergic skin. This allergy is brought about by the primary lesions (for instance, by a tuberculosis of the lymph glands or a kerion). One is justified in assuming that the local inflammatory reaction, which may even progress to necrosis, is due to the reaction of the antigen with the specifically sensitized skin. The individual lesion of the allergic dermatosis is the result of this local inflammatory process, and is called "tuberculid" in the case of tuberculosis and "trichophytid" in the case of trichophytosis. Even though certain phases of this process are still obscure and its essence is still not clear in many respects, no one doubts that this view of its pathogenesis corresponds with the facts. The aforementioned and many analogous eruptions of the skin are therefore correctly called "allergic." As I have shown in detail in my chapter in the "Handbook for Skin and Venereal Diseases," these conditions are particularly clear in the case of the dermatomycotic diseases. Aside from exceptional cases, a trichophytid can actually occur only when an allergic change of high degree has been caused in the skin through the effect of the primary lesion, and when fungi, perhaps also toxins in solution, have been transported by the blood from the primary lesion into such allergic skin. This fact has been proved through the study of spontaneous trichophyton infections in human beings as well as through the study of trichophyton infections produced experimentally in animals.

During the last few years, the term allergic dermatosis has come into more and more frequent use in the dermatologic literature of all countries. In the many series of experiments and heated discussions that have taken place in regard to this term, it is not the aforementioned

* Submitted for publication, July 14, 1928.

* Read at the Fifty-First Meeting of the American Dermatological Association, Washington, D. C., April 29, 1928.

exanthems caused by the hematogenous distribution of micro-organisms which are referred to. *The word allergic is here rather applied to an entirely different group of diseases of the skin, namely, to eczema, eruptions caused by the use of drugs, urticaria, Quincke's edema and to other diseases which are not of the skin, such as serum sickness, asthma and hay-fever.*

This recent development is remarkable and of far-reaching importance in dermatology. It is remarkable because until a short time ago allergic processes could be assumed only in diseases caused by living organisms or foreign proteins. This, however, applies to the aforementioned diseases to an insignificant degree. Up to the present time, through impressions gained from clinical experience and through the theories handed down to us from our predecessors, dermatologists have been more inclined to seek the causes for these diseases (especially for eczema) mainly within the organism—in disturbances of metabolism, and partly perhaps also in disturbances of the nervous system. The introduction of the principle of allergy with all its consequences into the study of the pathogenesis of these diseases causes a radical change in present day conceptions. Herein lies the far-reaching importance of the new idea for many branches in dermatologic science. This will be made clearer in the following paragraphs.

ALLERGY IN THE PATHOGENESIS OF DISEASE

The real problem which lies before dermatologists at present can be expressed about as follows: Are dematologists justified—and if so, to what degree—in introducing allergy as the leading principle in the pathogenesis of the foregoing diseases, and what are the consequences (both theoretical and practical) resulting from the introduction of this principle?

Before touching on this main problem, several preliminary questions must be elucidated, otherwise this discussion would remain fruitless.

The first and fundamental point concerns the definition of the term "allergy." What is meant by "allergy"? What are the characteristics of this term which differentiate it from other terms employed in pathology, and what conditions must be fulfilled in order that a pathologic process may be recognized as allergic? Should immunologists who are engaged in this matter be asked to answer the question, there would be almost as many different definitions as there are immunologists. One often has great difficulty in reaching the kernel of that which is essential and important from the point of view of human pathology and in separating it from the shell of the innumerable controversies which have resulted from laboratory experiments. After due consideration of the investigations of Doerr, Coca and others, and after research in this

matter, I have formulated the following definition of allergy as based on the clinical pathology: *Allergy is that state which has as its basis the property of certain groups of cells (organs) of the living organism to react in a specific manner when brought in contact with a substance which is, as far as is known, foreign to the organ or cells; the characteristic of this specific pathologic process lies in the fact that it is caused by the reaction of this exogenous substance with its specific cellular fixed antibody. The basis and the essence of allergy is the ability of the living cell to react with the production of specific antibodies to the stimulus of foreign substances, which are therefore called antigens, as well as the fact that the contact of the antigen with its specific cellular fixed antibody causes a disturbance of cellular life which usually results in an inflammatory reaction.*

It is clear that an organism which possesses or has acquired (by previous contact) such specific antibodies will react to the application of the specific antigen differently from an organism which does not possess such antibodies (allergy = different reaction).

From this definition other qualities characteristic of the allergic process can be logically deduced: The type and course of the allergic reaction are independent of the nature of the antigen but vary according to the localization of the antibody, that is, according to which organ reacts to the antigen. The effect which a substance acting as antigen, namely, through reaction with its antibody, has on the organism is different from the simple pharmacologic effect which the same substance has on an organism which does not have any antibodies.

Many antigens (trichophytin, foreign proteins, pollen, etc.) do not have any effect on a normal, unsensitized person, even though administered in high doses; whereas in the case of others (for example, quinine, arsphenamine, iodine, mercury), the primary pharmacologic effect is entirely different from the allergic effect, both qualitatively and quantitatively (the latter is due to the fact that in contradistinction to the allergic effect the pharmacologic one is proportional to the dose administered). It is this fact of changed reaction which caused Pirquet to give these phenomena the name of "allergy."

There is another circumstance which is of the greatest importance, namely, that the antibodies which are formed by and usually adhere to the cell can become free in the blood and still keep their power of specific reaction with their particular antigen. In the first place, these so-called "free antibodies" are of fundamental importance in therapy and prophylaxis. As has been known since the time of Ehrlich, the possibility of active and passive immunization (especially against toxins sensu strictiori) and—at least partly—the possibility of densensitization depend on their presence.

Furthermore, the rôle of these free antibodies in diagnosis is equally important. Their demonstration in each case enables one to say with absolute certainty that one is dealing with a true allergic (immune biologic) process, that is, one which is based on antigen-antibody reaction. It enables one also to determine the nature of the sensitizing agent.

There are various methods of demonstrating these antibodies. The one discovered by Prausnitz and Küstner has until now proved the most helpful in the elucidation of just those questions with which this article is concerned. The procedure is as follows: Approximately 0.1 cc. of the serum of an allergic person is injected intracutaneously into the skin of a normal person, and some time afterward (from several minutes to several days, most advantageously one day afterward) the antigen is applied to the previously treated site (either by intradermal injection or by the scratch method). If the reaction is positive, a wheal with an erythematous surrounding zone appears within a few minutes, grows larger during the next fifteen to thirty minutes, and then gradually disappears ("immediate reaction").

This reaction, which has been made use of in America, particularly by Coca and his associates among others, has already given much invaluable information concerning idiosyncratic diseases especially as well as concerning the nature of allergic reactions in general. I shall frequently have occasion to refer to this reaction. No other procedure is even approximately as important or certain as this direct demonstration of specific antibodies. If, in order to prove the probability of the allergic nature of a skin condition, other methods are employed, it is done only because in a large number of diseases of the skin, which more or less rightly appear to be allergic processes, for example in nearly all eczemas, Prausnitz-Küstner's and similar methods of direct demonstration have until now proved unsuccessful.

Among these other methods, specific sensitization may be mentioned as the most important. By this is meant the fact that by means of a certain substance one can specifically sensitize—make allergic—every person on whom an experiment is made. The classic prototype of this is the injection of foreign serums in anaphylactic experiments on guinea-pigs.

According to present knowledge, such a result can be conceived only on the basis of the formation of specific antibodies, and it is therefore a good argument for the supposition that there is present an allergic process in the sense I have already designated. The clearest results in this field are those obtained by me in sensitization to primroses, to which I shall refer subsequently. Further evidence in favor of the theory of an allergic process are the following: manifestations of desensitization, Widal's hemoclastic crisis, the combined occurrence of

various allergic processes (for example, quinine eczema and quinine asthma, hay-fever, urticaria and eczema from pollen toxin, asthma and eruptions caused by the use of arsphenamine, etc.). I cannot go into detail concerning these at present.

One argument that was formerly used against the theory of an allergic process, namely, the nonprotein nature of an antigen, has today completely lost weight. This question has been definitely decided by the aforementioned method of Prausnitz and Küstner. It has been determined that in hypersensitiveness to pollen (Coca, W. Jadassohn), in asthma (Klewitz and Wigand), in toxicoderma (eruptions from the use of drugs, Biberstein), as well as in many cases of hypersensitiveness

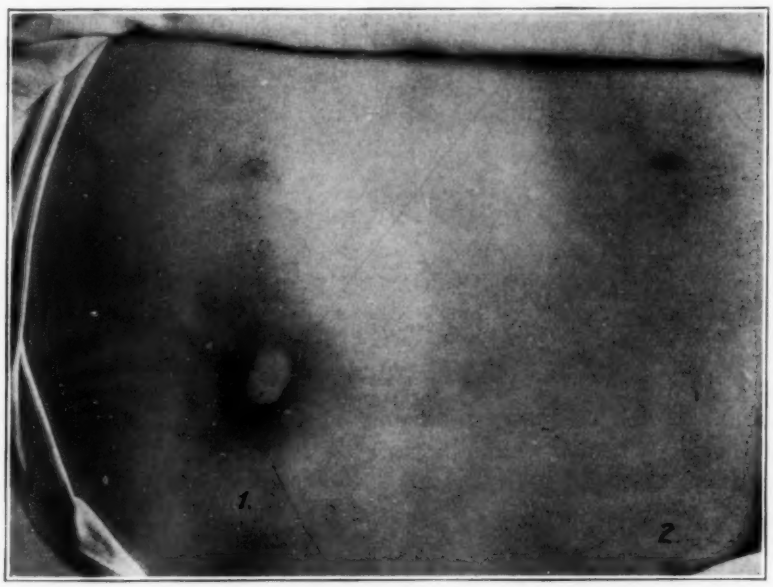

Fig. 1.—Passive transference of egg idiosyncrasy by the method of Prausnitz and Küstner. 1 indicates site of intradermal injection of 0.1 cc. of the serum of the idiosyncratic subject. Twenty-four hours later application of egg was made by the scratch method. A positive immediate reaction (urticarial wheal and erythematous zone) resulted; 2 indicates intradermal injection of 0.1 cc. of the serum of a normal subject. Twenty-four hours later application of egg was made by the scratch method. The reaction was negative. (The two upper spots are from a previous experiment.)

to foodstuffs (W. Jadassohn), the hypersensitivness based on antigen-antibody reactions is caused by substances which are not proteins.

In this connection I should like to refer to the case of a child who developed urticaria following the ingestion of eggs. This hypersensitiveness could be transmitted to a normal person with the serum of the child by the method of Prausnitz and Küstner, and is, therefore, based on an

antigen-antibody reaction. A reaction, however, could be produced on the skin of the child as well as on that of a passively sensitized person (wheal with erythematous surrounding zone, "immediate reaction") through the use not only of egg protein itself, but also of a protein-free dialysate. This case is of fundamental importance, because in the presence of such a hypersensitivity to egg one could have expected the causative antigen to be of protein nature. According to my experience, it does not seem to be absolutely certain that the rôle of the antigen which causes the reaction can be attributed to the protein as such, even in the classic form of anaphylaxis or in hypersensitivity to serum; for, according to investigations in my clinic, one can cause a reaction in human beings who have been sensitized to serum from a guinea-pig by the application of a protein-free dialysate.

Classic anaphylaxis is fundamentally only a form of allergy which occurs on sensitization with the protein of a foreign species. (Here I must refer to the reservations already made.) The entire process has all the earmarks which dermatologists have learned to regard as characteristic of allergic reactions. Only on historical grounds can one understand that some still insist on giving it a special classification instead of including it under allergy, and stress as particularly characteristic and typical the anaphylactic symptoms of the guinea-pig.

CHARACTERISTICS OF DISEASES DISCUSSED

Having sketched the theoretical outlines, I now come to the second part of the problem. What grounds are there for believing in a relationship between the aforementioned diseases which are so different clinically and histologically? What are their characteristic attributes, and to what extent do these speak for or against their allergic origin?

Clinical experience teaches that these pathologic conditions occur relatively frequently in the same person or in members of the same family either at the same or at different times. This has been described mainly by Spain and Coca as well as by Hanhart. All dermatologists are familiar with examples of such combinations; in one instance one finds eczema with asthma, in another urticaria with hay-fever or toxicoderma with asthma. In short, one may encounter all possible combinations, not commonly, but so frequently that it cannot be due to mere coincidence.

Even more important than these combinations is the fact that frequently the same substance may cause these different manifestations; this also may occur either in the same or in different persons. To name only a few examples: quinine can cause asthma, toxicoderma, eczema and urticaria; arsphenamine, eczema, asthma and toxicoderma of many different kinds; ipecacuanha, eczema, urticaria and asthma; pollen or dander, hay-fever, asthma, urticaria and eczema.

In figure 2 is shown a picture of a generalized eczema. It occurred in a boy hypersensitive to quinine on injection of 1 cg. of quinine hydrochloride. The same injection caused a serious attack of asthma.

Substances prepared from ascaris, of which I shall speak more fully later, when applied cutaneously, cause an acute urticarial reaction, such as the one shown in figure 4, and at the same time often cause a gen-

Fig. 2.—Universal eczema caused by a subcutaneous injection of 1 cg. of quinine hydrochloride. The same injection caused a serious attack of asthma.

eralized urticaria, diffuse edema and most serious asthmatic symptoms. Ipecacuanha causes both eczematous and urticarial reactions.

The foregoing manifestations, however, have further characteristic and important factors in common. Common to all of them is the fact that they are caused by exogenous and foreign substances. This fact requires no further proof so far as eruptions caused by the use of drugs are concerned, the majority of urticarias and asthmas (according to Storm van Leeuwen, Klewitz, Wigand and others) serum sickness and hay-fever.

ETIOLOGY OF ECZEMA

In the case of eczema the situation is somewhat different. Dermatologists, as is well known, formerly considered eczema as a dermatosis caused by endogenous metabolic disturbances, and many still accept this doctrine. The theoretical basis from which this point of view developed, namely, the old doctrine of the Middle Ages concerning "dyscrasic" conditions, has long since been abandoned as obsolete. It has therefore been tried again and again, even in recent times, to obtain exact and scientific proofs. This has been attempted for the most part, by the

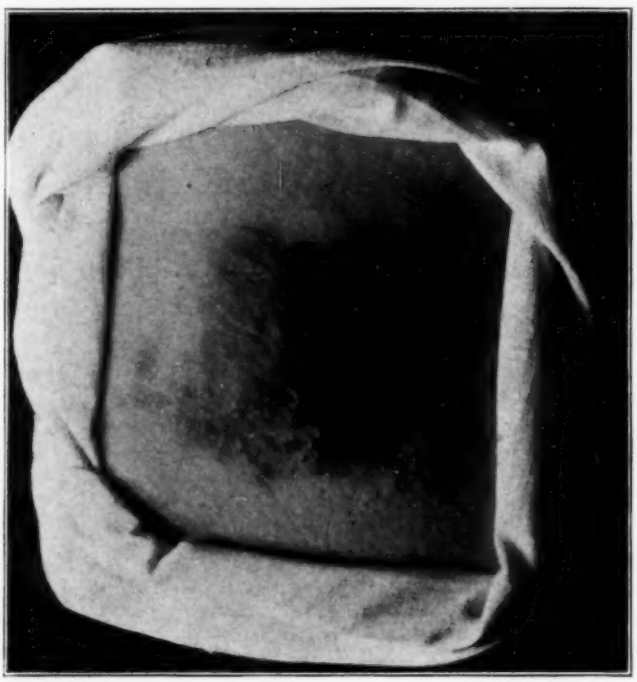

Fig. 3.—Eczematous reaction caused by application of a quinine solution to the intact skin of the patient in figure 2.

quantitative determination of different constituents of the urine and especially of the blood of eczematous persons (for example, the percentage of sugar, uric acid, calcium and potassium). If one compares the numerous investigations which have been made for this purpose in many countries the results of which have been published in many different languages, one can arrive at only one conclusion, namely, that up to the present time complete failure has resulted. There is not the least evidence of the existence of a metabolic disturbance which is common to all or to many types of eczema and which is pathognomonic for this con-

dition of the skin. Viewed from the standpoint of physiologic chemistry, eczema is not a metabolic disease. Whether and to what extent metabolic disturbances can play a contributory part in the pathogenesis of at least some types of eczema, is a question which I shall discuss later.

The dogma of the purely endogenous origin of eczema had this further consequence: all eczemas the exogenous causes of which were known were not classified as eczemas but were branded as dermatitis arteficialis eczematosa. Many investigators—I shall name only Jad-

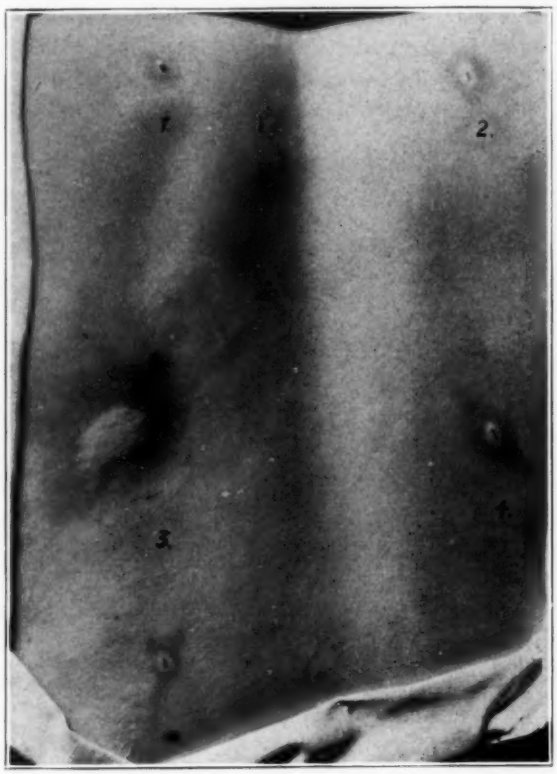

Fig. 4.—Ascaris idiosyncrasy with neutralization of the antibody. 1 indicates mixture of serum from idiosyncratic subject plus antigen intradermally injected. Twenty-four hours later application of the antigen was made with no reaction (neutralization of the antibody); 2 is the same as 1, but instead of serum from an idiosyncratic person, normal serum (control) was used; 3 is the same as 1, only in place of antigen, physiologic sodium chloride was used in the mixture. There was a positive reaction with the method of Prausnitz and Küstner (no neutralization of the antibody); 4 is the same as 3, but instead of serum of an idiosyncratic subject, normal serum was used with no reaction; *a* indicates application of antigen to site not previously prepared; no reaction resulted.

assohn, Darier, Pinkus, Highman—have clearly seen that this situation was unnatural and untenable. As a matter of fact, there is not a single objective sign which justifies such a division. For example, as I have shown, one can sensitize experimentally to the primrose normal persons who have never suffered from eczema or any metabolic disturbances. One can then produce in them every clinical, macroscopic and microscopic histologic change which is considered characteristic of true eczema. It is further beyond doubt that eczema caused by primula, odol, shoeblacking, furs or any other exogenous factor will unhesitatingly be regarded as eczema by all dermatologists. The condition has often been investigated as to its metabolic pathogenesis, and the patients have been treated by all sorts of dietary measures as long as either an exact painstaking history or a functional test of the skin (with eczematogenous

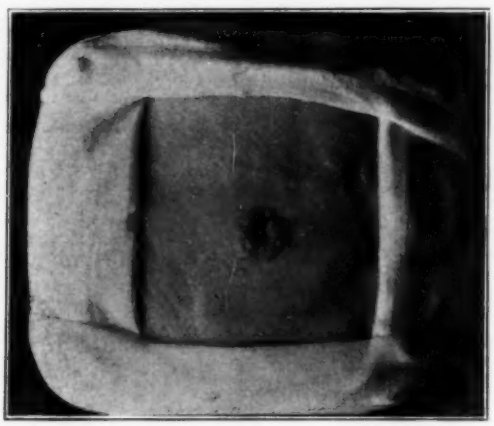

Fig. 5.—Positive eczema test reaction forty-eight hours after the application of a small piece of shoe leather on the arm. The patient had suffered for two years from recurring attacks of subchronic eczema of the feet. After the particular shoes were discarded, complete recovery followed.

substances) by chance has not brought the true cause to light. A classification of diseases which purposes to be scientific cannot be made on the basis of such factors of chance.

The more pains one takes in the effort to find the cause in cases of eczema as regards both the history and the functional tests, the more exogenous factors will be found as the real bases for this disease. In every case of chronic or acute eczema in my clinic, the so-called *eczema tests* are systematically made. These tests are not to be confused with the ordinary so-called "skin tests." In the eczema tests, eczematous substances and not proteins are used as test substances instead of foodstuffs (which in my opinion play an unimportant rôle in the cause of eczema). These substances with which the tests are made as a routine,

are the following: formaldehyde (1 to 5 per cent), mercury (1 per cent sublimate or ointment of white precipitate of mercury), turpentine, naphthalin (1 per cent), tincture of arnica, primrose (piece of the leaf), adhesive plaster, iodoform (powder) and quinine hydrochloride (1 per cent).

In special cases, substances are used which seem indicated because of the profession or special history of the patient (for gardeners, various plants; for masons, cement, etc.; for eczema of the head, hair lotions, mouthwashes and other toilet articles; for eczema of the neck in winter, furs, fur dyes, etc.).

The technic of the test is also different. The test substances are not rubbed into a scratch in the skin as in the Pirquet test but on the intact skin. The area of application is covered with a piece of linen, or, as in

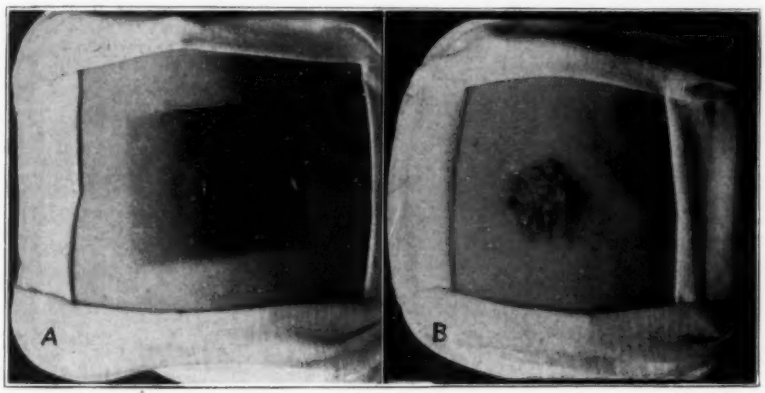

Fig. 6.—Positive eczematous reactions on tests with (*a*) 1 per cent alcoholic solution of quinine; (*b*) hair lotion containing quinine. The patient had suffered from recurring attacks of acute eczema of the head and face. Complete recovery resulted after the use of the hair lotion was discontinued.

tests with substances like solutions of sublimate, the linen is soaked with the test fluid. Over that is placed gutta percha, and the whole is held fast with adhesive tape.

The results of the skin tests are read after twenty-four hours, but should be observed forty-eight hours or longer. Only those cases are said to be positive in which the reaction is in the form of an eczema, that is, besides redness and swelling, papules and vesicles occur. They are labeled from 1 to 5, according to the various degrees of reaction. It is to be noted that the reaction may become positive later (up to ten days and longer). Systematic examinations by the foregoing method, which I have used for many years in my clinic, have taught me many things which are important for the pathogenesis of eczema.

I shall briefly summarize some of the results. External factors play a much greater rôle than has hitherto been ascribed to them in the etiology of acute, subacute and chronic eczema.

In many cases in which the condition has been considered as metabolic endogenous eczema and the patient treated accordingly, it has been possible, by means of careful and thorough functional skin tests, to bring to light exogenous causes as the real etiologic factors. The healthy skin of an eczematous person differs from that of the normal person in that the skin of the former gives a much greater percentage of positive reactions with any one of the substances as well as with many more substances.

The sensitivity is either monovalent, that is, only one substance of all with which the patient was tested produced a positive reaction, or polyvalent, that is, one may secure a positive reaction with two or more substances, as for instance: turpentine, quinine, mercury, iodoform and primrose. It is doubtful whether unspecific general sensitivity against all ordinary exogenous substances exists. The sensitivity can be regionally different in quantity or can be positive only in certain regions. It is, for instance, often limited only to the areas of the disease in which the skin most often has come in contact with the antigen or substance to which it is sensitive and has through that contact developed eczema. It is therefore important that the healed part should also be used for the tests.

Experience teaches that eczema develops when the skin comes in contact with an eczematous substance to which it is sensitive, as already explained. The differential clinical or anatomic features of the eczematous as against the urticarial or erythematous-exudative reaction most likely are based on the fact that the cells of the epidermis (perhaps also the papilli) are the seat of the sensitivity in the former, while in the urticarial reaction only the blood vascular system is involved (J. Jadassohn, Lewandowski, Bloch, Lehner-Rajka and others).

I therefore come to a conclusion which is of fundamental importance in the pathogenesis of eczema. *In principle a difference does not exist between the so-called artificial eczematous dermatitis and true eczema (the "eczématose"* of the French). Whether there are endogenous as well as exogenous causes of eczema still remains a question. I believe it must be answered in the affirmative, for, as I was the first to determine experimentally, and as has been frequently confirmed (Lehner-Rajka, Schönhoff, Tachau, Pick, Urbach, Pulay and others), eczema can be produced by the injection or ingestion of an eczematogenous substance, for example, iodine, quinine, resorcin, arsphenamine (and bread?). It is therefore possible that abnormal (or even normal) metabolic and hormonal products may play a part in the genesis of eczema. This can

be proved only by further investigations. Such research would be much more important for a recognition of a relationship between eczema and metabolism than the former schematic determinations of haphazardly chosen constituents of the blood serum. My own investigations for the purpose of demonstrating eczematogenous substances in the blood of persons having chronic eczema have brought only negative results. Moreover, tests (Schürch) to determine whether the physiologic products of the intermediate metabolism (urea, uric acid, sugar, epinephrine, etc.) are capable of causing eczema in predisposed persons gave a positive reaction in only one case (with beta-oxybutyric acid).

After this necessary digression concerning the etiology of eczema, I return to the discussion of the characteristics common to all the manifestations which are herein considered. I have shown that the causative agents in the overwhelming majority of cases originate outside the cell. This holds true not only in principle but in fact in the majority of cases of eczema. I can now go a step farther and add that a qualitative relationship does not exist between the nature of these causative agents and the nature of the reaction they cause. This is true to at least a great degree, although the statement requires modification in some respects. To put the matter more concretely: On the one hand, each of the aforementioned manifestations—eczema, urticaria, asthma, etc.—can be caused by innumerable and most varied agents, ranging from simple elements to complicated organic compounds; on the other hand, the same substance, quinine, arsphenamine, eggs, pollen, feathers or dander, is capable of producing each one of these manifestations. The uniformity of the pathologic picture of eczema, urticaria and the other conditions is not founded on their etiology as in other diseases (for example, syphilis, trichophytosis, leprosy and tuberculosis), but is dependent on the organ which is attacked by the harmful substance. The constitution of the latter is in itself irrelevant. The site of the reaction, i. e., the factor of localization, and not an etiologic factor, determines the pathogenesis.

It is of the utmost importance to emphasize that all these factors which are common and characteristic of the foregoing manifestations are those which have been determined as characteristic of allergic reactions in general. It is improbable that such a combination of essential attributes is a mere coincidence.

IDIOSYNCRASY

Another extremely important quality which all these pathologic conditions have in common seems to separate them from experimental allergy and anaphylaxis. That is the characteristic which is called "idiosyncrasy." All of the foregoing diseases are idiosyncratic, which means that reactions caused by the action of the substances in question occur only in a small percentage, but never in all persons. In 100

or 1,000 persons who are exposed to the action of iodoform, primula, pollen, neoarsphenamine or ursol, only a few become ill (these, however, often become seriously ill). This is an old, well known, extremely remarkable, even puzzling phenomenon. Concerning its nature, the word idiosyncrasy naturally says and explains nothing. The recognition of this phenomenon (though its classification under the heading of allergy) is one of the finest and, for dermatology, one of the most important results of the modern study of allergy.

At first, idiosyncrasy in its clinical aspects seems to stand in direct contradiction to allergy and anaphylaxis. Through vaccination, through infection with tubercle bacilli or *Trichophyton* fungi, practically every human being becomes allergic to the antigen applied. Every guinea-pig becomes anaphylactic through sensitization with the protein of a foreign species. Allergy and anaphylaxis are—at least in principle—general reactions independent of the individual constitution. They can be produced at will. Until now, however, every human being could not be sensitized at will, much less every animal, against the "idiosyncrasiogens." The presence of an individual, sometimes familial, and apparently hereditary disposition (Spain and Cooke, Coca, van der Meer, and others) seemed a necessary requisite if these substances were to take effect, that is, create a reaction. Only he who is hypersensitive to iodoform can develop iodoform eczema, while he who is hypersensitive to arsphenamine develops dermatitis or asthma following the injection of this substance. Only he who is hypersensitive to pollen develops hay-fever, etc. This individual constitutional factor is so striking in all idiosyncrasies that not only has it always been the connecting link between all these conditions, but lately Coca, whose research in these questions deserves so much credit, has decided to group these reactions on the basis of their hereditary and other characteristics under the name "atopy" and to separate them from typical allergy and anaphylaxis. The case presents itself in this manner when viewed through the general impressions of clinical experiences. As soon as these experiences are analyzed more exactly, however, and experiments are made, all this appears different.

The first thing which then surprises one is that the percentage of idiosyncratic human beings varies to an exceptionally great degree according to which substance is employed as idiosyncrasiogen. For certain substances few persons have an idiosyncrasy; to others, especially when contact is frequent or intensive, a large percentage is or becomes sensitive. Many anatomists become sensitive to formaldehyde, many artisans to turpentine, a great number of patients to adhesive plaster and many workers in canneries to asparagus (Sternthal). Idiosyncrasies for numerous other substances are present in even a greater number of

persons. Thus, according to de Rudder, many children can be sensitized through repeated injections of a hypnotic related to phenobarbital (after an incubation of from six to fourteen days). According to Schwarzschild, 45 per cent of all persons tested can be sensitized to orthoform; according to American authors (Spain, Coca, MacNair and others), over 60 per cent are sensitive to poison ivy, and according to my experiments 80 per cent of all adults are sensitive to *Ascaris*. Ancona states that all workers with grain infected with *Pediculoides ventricosus* eventually develop asthma. According to Schittenhelm and Stockinger, all workers who constantly handle nickel salts develop nickel eczema. These results show that there are a great number of otherwise typical idiosyncrasies in which the individual and hereditary factor is far less important than the general one. In this respect, therefore, some idiosyncrasiogens are closer to the allergens and anaphylactogens; for large numbers of persons, sometimes more than 50 per cent, can be sensitized by them. It is a well known clinical fact that the manifestations of idiosyncratic sickness often do not follow the first medication (the first contact), but appear only during the course of treatment. Sensitization as well as its reverse image, desensitization, can be observed clinically, and even typical focal reactions can be noted. All these manifestations are well known to dermatologists through immunology.

My own experiments with primula are striking in this respect. As is well known, hypersensitivity to this plant is a classic form of idiosyncrasy. Among the many thousands of gardeners or lovers of flowers, who handle primroses every year, only a small percentage is taken ill, some following the first contact (?), others (surely many more) after repeated contact. It is certain, however, that this idiosyncrasy is often a family trait, not seldom associated with other idiosyncrasies in the same family.

In my experiments I made a concentrated extract of primula through a series of extractions and distillations. With this I painted the skin of normal persons (on an area on the arm about 4 sq. cm., which had first been abraded with sandpaper). After the first (also frequently after the second or third) painting, a vesicular inflammation appeared at the site of application. From this time on, each subject proved to be hypersensitive to contact with the primrose. This sensitivity covered the entire skin of the patient, and the reaction manifested itself clinically and histologically exactly like the natural (spontaneous) primula idiosyncrasy, in other words, through the formation of an acute papulovesicular dermatitis of eczematous type. *In this case, therefore, the individual constitutional factor has been overcome simply by concentration of the idiosyncrasiogen (antigen), and a typical idiosyncrasy has been transformed into an allergy.* The sensitization was limited and specific to the antigen (primrose). It was obtained through a local

circumscribed primary focus by a procedure similar to that used in inoculation with tubercle bacilli, dermatomyces or spirochetes or an injection of foreign serum; on repeated inoculations, local reactions (exacerbation of earlier healed foci) could be observed. In my opinion this shows that the reaction is caused by the formation and cooperation of genuine specific antibodies.

I am one of the test subjects. Whereas formerly contact with primula did not affect me, today I am so sensitive that the touch of a

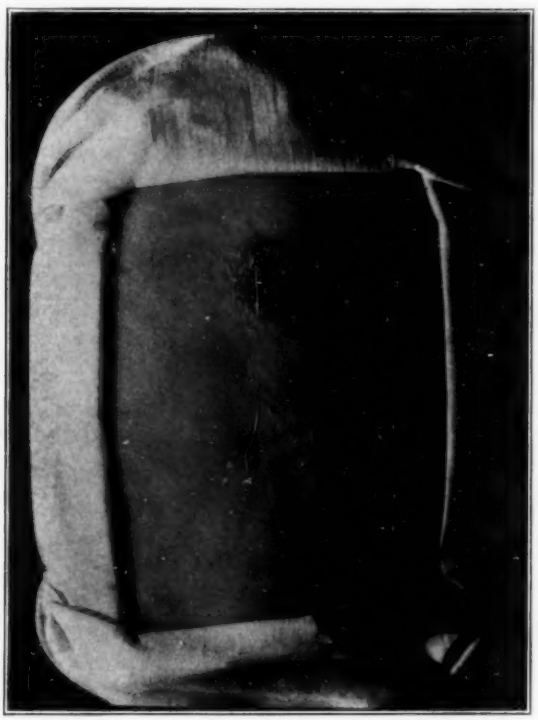

Fig. 7.—Eczematous reaction caused by the application of primula obconica on my own arm subsequent to experimental sensitization through distillate of primrose extract.

leaf or even passing through a room in which dried leaves have been pulverized causes an extremely annoying eczema of long duration.

I recently succeeded in producing histologically typical eczematous changes in the skin of rats and regular sensitization of the skin of guinea-pigs. In the skin which was treated with the aforementioned primrose extract, one can see the status spongiosus and the formation of vesicles as in the human skin.

The problem of idiosyncrasy to primula seemed to me so interesting that I wished to learn more about the substance which was able to pro-

duce such manifestations. I therefore joined forces with my friend and colleague, Professor Karrer, the eminent chemist of the university of Zurich. We planted 3,000 primula plants, and Karrer was successful in obtaining from these 0.1 Gm. of a pure crystalline substance with the formula $C_{14}H_{18}O_3$ (respectively, $C_{14}H_{20}O_3$). This substance has the, or one of the idiosyncrasic properties of the primrose. Even in a quantity of only about 0.02 mg., this substance causes a widespread and violent eczema. *From the foregoing one can again deduce that a specific sensitization which in principle corresponds to the type of an allergy or an anaphylaxis can be caused by a relatively simply constructed nitrogen-free substance.*

The gap which seems to exist between genuine allergy and anaphylaxis and idiosyncrasy seems to me to have been bridged at least in principle through experiments of this nature. Clinically, the conception of idiosyncrasy will naturally be kept, but the differences will be quantitative rather than qualitative. As I have already emphasized, however, the direct demonstration of specific antibodies in idiosyncratic reactions is far more important and much more convincing than these experiments; for such demonstration gives the key to the mechanism of these reactions, and determines that the cause of idiosyncratic manifestations is a true antigen-antibody reaction.

The Prausnitz-Küstner method is, as I have before mentioned, superior to all others for this demonstration. Besides this method, one may consider the transfusion of large quantities of blood or serum, which, of course, is possible only in exceptional cases (de Besche, Frugoni, Prausnitz, Ramirez and others); one may also consider the method of Urbach-Königstein (using the contents of artificially formed skin bullae) and the method of Lehner-Rajka (the transference of human serum into the ears of albino rabbits).

In this manner, especially with the technic of Prausnitz and Küstner, the existence of specific antibodies has been demonstrated in so great a number of idiosyncracies that it would take too much time to cite the individual cases. I will therefore mention only the different classes and add several examples from my own experience.

1. In hay-fever the demonstration of antibodies through transference, by the method of Prausnitz and Küstner, is successful. This, de Besche and Coca and his collaborators have shown by their excellent investigations, which have been substantiated by the work of other experimenters (W. Jadassohn, Ducret). The reaction is absolutely specific for the individual species of grasses as well as for animal scales, molds, feathers, grain and other substances.

2. In asthma specific antibodies have been demonstrated chiefly by Coca and Storm van Leeuwen and Kremer; in other conditions their

presence has been demonstrated by many other authors: horse asthma by de Besche; in ipecacuanha by Coca; in cat asthma by Samson; in melubrinasthma by Königsfeld; and in urso asthma (but in this case by transference to an animal) by Curschmann.

3. In the case of hypersensitivity to serum and serum sickness, Biberstein and Werner Jadassohn (one case) and Ramel (three cases) report positive results.

4. In idiosyncrasies to foodstuffs (mostly in the form of urticaria), reports concerning the following foods have been made: fish (Prausnitz and Küstner); celery, honey, camomile, eggs (W. Jadassohn, in the clinic at Zurich); lobster (Groer and Progalski), and eggs (Hirszfeldwa).

5. Eruptions from the use of drugs, especially mercury, neoarsphenamine, ursol, pyramidon (Biberstein); then arsenic (Königstein-Urbach); and mercury (Lehner-Rajka).

Coca says that he was never successful in causing genuine drug idiosyncrasies; I, too, until now have had negative results, although my experiments have not been numerous.

6. The question is more difficult to decide in the case of eczematous idiosyncrasies. Positive results have been obtained by Biberstein with mercury, neoarsphenamine and ursol, by Perutz with turpentine and primrose, by Königstein-Urbach and others, by Lang and Doerr with iodoform, iodine and arsphenamine (only by transference to animals) and by far the greatest number of cases—not only by the Prausnitz-Küstner method, but by transference to rabbits—by Lehner-Rajka (with adhesive plaster, methol-rodinol, neoarsphenamine, primula and procaine hydrochloride).

My own attempts to demonstrate antibodies in the serum of persons with eczematous idiosyncrasies (primula, iodoform, quinine, camomile, mercury, adhesive plaster) through the technic of Prausnitz and Küstner have until now brought negative results.

This seems remarkable to me as in other cases of idiosyncrasy (eggs, celery, camomile, pollen, honey and *ascaris*) the transference always succeeded with the greatest ease. It must further be remarked that in the majority of cases of eczema in which transference is reported as positive in the literature on this subject (as for example by Biberstein and apparently also by Lehner-Rajka) the application of the antigen to the passively sensitized skin did not result in an eczematous but in an urticarial reaction (immediate reaction). It is possible that this difficulty in regard to eczema is based on the fact that in this type of idiosyncrasy it is exceptional for the antibodies, the presence of which is assumed from experience with primrose eczema, to become free. Perhaps they usually remain attached to the cells which have formed

them. This would, among other things, explain the fact that in eczema desensibilization and immunity are difficult to obtain. One cannot, however, exclude the possibility that Prausnitz-Küstner's method is not so suitable in the case of eczema, and that much better results could be obtained through the application of newer methods (for example, the method of Lehner-Rajka or Königstein-Urbach). As long as both these possibilities have not been proved, it seems advisable to give eczema a special place within the group of idiosyncrasies. This is also its due in clinicohistologic respects. This would not prejudice the fact of its relationship to the general allergic reactions.

On the other hand, it seems to me that without doubt all those forms of idiosyncrasy in which a clear and certain Prausnitz-Küstner reaction is obtained and which therefore are already considered incontestable antigen-antibody reactions, belong to one special group. They all have in common the fact that a cutaneous application of antigen causes an urticarial immediate-reaction in both active and passively sensitive subjects. There is something significant in this; for, with the same antigen, the result of the demonstration of free antibodies by the method of Prausnitz and Küstner varies. If the patient has shown an immediate urticarial reaction, the transference is successful; if the patient's reaction is eczematous, the demonstration fails. I have experienced this with both camomile and ipecacuanha. If the cutaneous application caused an urticarial reaction (disappearing wheal), free antibodies could be demonstrated by the method of Prausnitz and Küstner; if in another person the same antigens caused an eczematous reaction, this was not possible. The idiosyncransies which are represented in this Prausnitz-Küstner-positive group are manifested clinically as asthma, hay-fever, urticaria, diffuse dermatitis, toxicoderma and serum sickness. Whether eczema or certain forms of eczema can be included in this group, will be decided definitely only when further investigations have been made.

The method of Prausnitz and Küstner is important not only because it has made clear the allergic-anaphylactic nature of so many idiosyncrasies, but also because the analysis of this reaction has thrown important light on their mechanism and course. In view of the enormous importance which such specific antigen-antibody reactions have in immunobiologic and pathologic processes, this is now of great theoretical interest, and will perhaps also be of great practical value in the future. I shall say something further about this, although it does not lie within the immediate boundaries of my present communication. I base my statements mainly on investigations which W. Jadassohn carried out in my clinic and which are as yet unpublished, as well as on the investigations from Coca's laboratory and a publication by Storm van Leeuwen and Kremer.

The main point of Jadassohn's investigations was the idiosyncrasy to *Ascaris*. To practitioners and zoologists who work with this worm, this idiosyncrasy has been known for a long time and has manifested itself clinically in exceptionally violent attacks of dermatitis (without eczematous character) in urticaria, in symptoms similar to those of hay-fever and in severe asthma. The antigen from *Ascaris* is not destroyed by heat and passes the dialyzing membrane; it is, therefore, in this case also not a protein. In highly hypersensitive persons, it is effective even in the smallest quantities (for example, entrance into a room in which some time previously worms or their eggs have been prepared suffices to bring on an attack of asthma of several days' duration, or a small

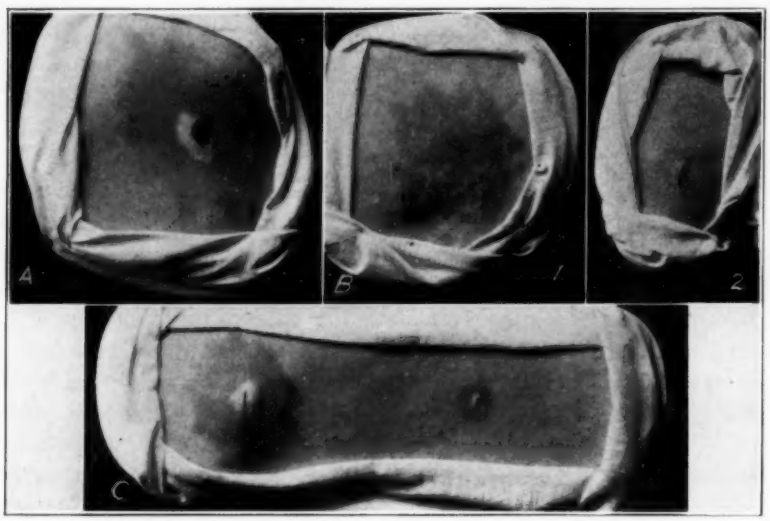

Fig. 8.—Ipecacuanha hypersensitivity of urticarial and eczematous type. Passive transference of the former was successful, of the latter unsuccessful. The upper figures show results of skin tests with emulsion of ipecacuanha on two hypersensitive patients, *A* and *B*. Patient *A* gave positive immediate urticarial reaction, but an eczematous reaction could not be obtained in this patient; patient *B* gave a positive eczematous reaction after twenty-four hours as shown in 1 and a negative urticarial reaction as shown in 2. The lower figure shows results of passive transference by the method of Prausnitz-Küstner to a normal person. The lesion on the left shows positive Prausnitz-Küstner reaction (wheal formation) as a result of the application of the antigen twenty-four hours after the injection of the serum of patient *A;* that on the right shows no reaction as the result of the application of the antigen twenty-four hours after the injection of the serum of patient *B*.

amount of antigen applied to a scratch can cause a universal urticaria). As I have already mentioned, our experiments have shown that the majority of adults are sensitive, that is, they show an immediate reaction to cutaneous application of the antigen.

This idiosyncrasy is based on an antigen-antibody reaction of the Prausnitz-Küstner type, for it (the antibodies contained in the serum of hypersensitive persons) can be transmitted with the greatest ease to the skin of normal, not sensitive persons, by the method of Prausnitz and Küstner. It follows that this antibody (and this is also demonstrated by all previous experiments with the Prausnitz-Küstner method) must possess an affinity for the cells of the normal skin which is so great that it rapidly becomes anchored and fixed at the site of injection (within several minutes). This affinity for the cell disappears when the antibody (the serum of the idiosyncratic person) is mixed with its antigen in the test tube, as Coca proved in careful experiments on pollen idiosyncrasy. According to Coca, however, in this experiment the antigenic faculty of the pollen remained intact.

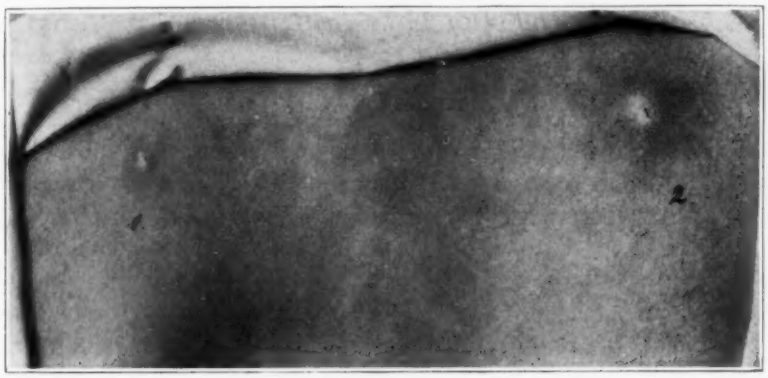

Fig. 9.—Ascaris idiosyncrasy with neutralization of the antigen. 1 indicates site of application of a mixture of serum from an idiosyncratic subject plus antigen on a site which had been previously passively sensitized by injection of serum from an idiosyncratic subject. No reaction followed (neutralization of the antigen); 2 is the same as 1, only the serum from an idiosyncratic subject in the mixture was replaced by normal serum. A positive reaction with the method of Prausnitz and Küstner resulted (no neutralization of the antigen). The patient's skin when not previously passively sensitized did not show any reaction to the application of the mixtures employed. Traumatic scratch gave the same result as seen in 1.

On the other hand, Storm van Leeuwen and Kremer, in experimenting with different asthma allergens (molds, hairs, scales), have demonstrated that the antigenic faculty of the allergen disappears when it is mixed with its respective serum, for such a mixture has no longer an effect on an actively hypersensitive person.

The contradiction which results from these two statements is only apparent, however, as is demonstrated by the quantitative studies of idiosyncratic reactions to *Ascaris*. By mixing *Ascaris* antigen and serum-containing antibodies, in certain fixed proportions, we could show

that the combination resulted in the neutralization of both. Both the antigenic faculty and the faculty of passive sensitization is lost. I need not mention the close analogy of this to Ehrlich's statement regarding toxin-antitoxin reactions in the early days of immunology.

CONCLUSION

In my discussion of the subject I began with the question whether idiosyncratic dermatoses (urticaria, Quincke's edema, toxicoderma, eczema, drug eruptions, and their closely related diseases, asthma, hay-fever and serum sickness) represent allergic reactions as regards the type and mechanism of their pathogenesis, that is, whether they are caused by the contact of an antigen with its own specific cellular fixed antibody. The answer to this question is: A pathogenesis of this kind has been proved in a great many cases of idiosyncratic diseases, which manifest themselves clinically as asthma, hay-fever, toxicoderma and urticaria (Quincke's edema) and serum disease. This has been proved by the method of Prausnitz and Küstner.

As far as eczema is concerned, I should not like to regard this as a certainty, although many factors seem to justify this assumption. These are above all the possibility of specific sensitization and the introduction of the quantitative point of view in idiosyncrasy. This allergic conception has been a great step forward in the understanding of these diseases and has to some degree represented a complete change in the ideas concerning their pathogenesis. It seems beyond doubt that many clinical manifestations of idiosyncratic diseases which were formerly inexplicable have now found a plausible and simple explanation; as, for instance, specific sensitization and desensitization, the varied etiology of all idiosyncrasies and the independence of the individual manifestations from the nature of the causative substances.

From this conception the following deductions may be made: Whether or not a person has one of the foregoing idiosyncratic diseases depends on two factors: exposure to an antigenic substance, and the capacity of a given organ to produce specific antibodies. In this second factor lies the personal and often constitutionally hereditary character of idiosyncrasy (idiosyncratic or allergic diathesis). To determine the influence of the vegetative nervous system and perhaps also of the hormones, further research is necessary. Another aim in this research is to prove that products of physiologic or pathologic metabolism are present among the antigens which can produce idiosyncratic reactions and thus to establish the relationship between different types of idiosyncrasies, especially between eczema and metabolism.

I recognize that in this outline in which, in agreement with Doerr, I have set up a conception or theory of idiosyncrasy as a unity based on

the idea of allergy, I have hurried somewhat in advance of the facts. In certain places there are many links missing in the chain of proofs, links which must be supplied by laborious and painstaking experimentation. Often, as for instance in eczema, one is forced to deduce from analogies instead of having direct proofs. Lured by the tendency to simplification, one is perhaps tempted to emphasize the common factors and to neglect the considerable differences which must exist between the various types of idiosyncrasies. These are even apparent in clinical observation. Above all, one perhaps goes too far in this generalization when one does not take into sufficient consideration that perhaps only a part of the idiosyncratic manifestations have an allergic basis. It is possible that others have an entirely different pathogenesis; for example, they may depend directly on stimuli transmitted by the vegetative nervous system (as in psychogenic urticaria) or perhaps on entirely unspecific changes in the colloid milieu of the cell or the cell membrane.

In spite of some imperfections of this theory, it seems to me that the introduction of the allergic principle in the science of the idiosyncratic dermatoses has been an important and fundamental step forward. After a long epoch of analytic research dermatologists have thereby again arrived at a fertile and stimulating synthetic conception. In contradistinction to the old synthetic dogmas, represented by the doctrine of diatheses and humors, the new theory is based, not on speculative ideas, but on scientific observations and facts.

CLINICAL ASPECTS OF ALLERGY IN DERMATOLOGY*

JOSEPH V. KLAUDER, M.D.
PHILADELPHIA

As first used by Pirquet, the term allergy was meant to apply to all forms of altered reaction capacity of cells. Subsequently, it was applied to all forms of hypersensitiveness, that is, clinical reactions allied to anaphylaxis in which an antigen-antibody mechanism either had not been demonstrated or had not played a rôle. The word itself means nothing more than altered reaction. In this comprehensive meaning it has also been used to describe the phenomenon of altered reactivity, the cause of which is unproved. Thus there are recorded the terms "physical allergy," "climatic allergy," and in this connection, the term "emotional anaphylaxis" may be mentioned.

A discussion of the dermatologic aspects of allergy in the broad meaning of the term would embrace a considerable number of cutaneous diseases and cutaneous reactions. For example, all types of eczema, since this disease manifests altered reactivity of the skin and blushing, could be regarded as psychical allergy. Indeed, the symptomatology of disease generally is an expression of altered reactivity of the cell incident to physiochemical changes. This comprehensive meaning of allergy is too remote from the underlying mechanism of experimental anaphylaxis, the prototype of the phenomenon, to be discussed.

It is desirable therefore to limit the meaning of allergy to that of hypersensitiveness. By hypersensitiveness is meant: "that state in which an individual reacts specifically to contact with a given substance with symptoms that fail to develop upon similar contact in a normal individual of the same species. If the substance involved is non-toxic, the normal individual will show no reaction whatever to contact which may give rise to the most extensive and serious results in the hypersensitive. If the agent is a primarily toxic one, the hypersensitive individual will react to sub-toxic amounts, and the manner in which he reacts may have no symptomatic relationship to the usual toxic effects of the responsible agent." (Zinsser.[1])

In clinical discussions of hypersensitiveness as manifested in dermatology, there have been much generalization, reasoning by analogy and by a posteriori. Many hypotheses have been taken for facts. The following statements taken from the current literature serve as illustrations:

From the resemblance of the lesions in erythema multiforme to those in urticaria and serum sickness, the former disease is probably anaphylactic like the latter. In

* Submitted for publication, July 18, 1928.

* Read at the Fifty-First Annual Meeting of The American Dermatological Association, Washington, April 30, May 1-2, 1928.

1. Zinsser, Hans: Hypersensitiveness, Boston M. & S. J. **196**:387, 1927.

some cases the condition is due to sensitization to a definite substance, such as a food or drug, but in others it is often difficult or impossible to trace the actual source of absorption.

Although very little is known as to the production of eczema by absorption of protein, other than foods from the bowel, by analogy it may be assumed that in some cases the eczema may be due to sensitization of the skin to protein of organisms from the bowel.

How far is one justified in generalizing and how valid is such reasoning in a clinical consideration of hypersensitiveness?

One may syllogize that since itching is a symptom of the anaphylactic state in guinea-pigs, it is therefore a symptom of the analogous state in man. This deduction becomes valid if confirmed by clinical observation.

CLINICAL PHASES OF HYPERSENSITIVENESS

From a diagnostic and therapeutic standpoint, clinical phases of hypersensitiveness may be separated into two groups. One embraces concrete definite instances which conform to the definition of hypersensitiveness stated herein, in that the sensitizing substance or substances are the cause of the patient's symptoms in accordance with the principles of inductive reasoning "that ought to be regarded as a cause of a phenomenon, which when it is present, the phenomenon is present; when it is removed, the phenomenon is removed; when it increases, the phenomenon increases; when it decreases, the phenomenon decreases." [2] The other group embodies those cases in which the sensitizing substances are not the cause of the patient's symptoms (nonspecific cutaneous reactions).

The clinical separation is diagrammatically shown in figure 1. Phases of hypersensitiveness are grouped as conclusive and inconclusive. The conclusive embrace the cutaneous reactions resulting from the following: bacterial sensitization; cutaneous hypersensitiveness in which the skin only is in a state of hypersensitiveness; another group in which there is a cutaneous hypersensitiveness as well as a somatic hypersensitiveness, and a final group embracing only somatic hypersensitiveness. The patients in whom the positive cutaneous reactions are specific are placed in these groups; diagnosis is expedited; the cause of the patient's symptoms are explained, and treatment may be of a definite character either through desensitization or by removal of the sensitizing substance. The inconclusive phase essentially includes patients in whom the cutaneous tests, although positive, are of a nonspecific character. The cutaneous tests are inconclusive as the removal by ingestion or contact

2. This is Liberatore's expansion of the principle of induction. A more common rendition of it is, "The same cause under the same circumstance produces the same effect."

of those substances giving positive reactions do not always alleviate the symptoms or affect the course of the disease. The term "allergic state" has been most employed in describing this phase of hypersensitiveness. These various phases will be discussed separately.

Skin diseases that are expressions of hypersensitiveness in a speculative sense, or by analogy, are not included in this discussion, nor are the diseases in which photosensitivity is concerned in the pathogenesis. This includes hydroa aestivale, pellagra and solar urticaria. Experimental studies support the belief that photodynamic substances, notably hematoporphyrin, are the substances that cause photosensitivity. Knowledge

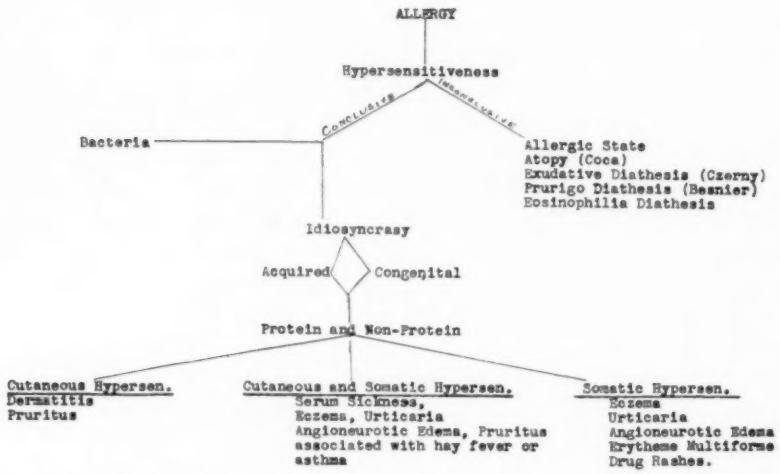

Fig. 1.—Diagram of clinical phases of hypersensitiveness in skin diseases.

of the pathogenesis of these diseases is too incomplete to classify them unreservedly as phenomena of hypersensitiveness of the type under discussion.

Doerr [3] divided allergic phenomena as manifested in dermatology into the following groups: serum sickness, hypersensitivity against mallein, trichophytin, tuberculin and luetin; idiosyncrasy, congenital or acquired (differentiation not possible), or development of specific sensitivity against nonantigenic substances, such as casein.

Trumbull [4] classified the skin diseases which might be considered due to protein allergy as follows: eczema, urticaria, prurigo, erythema multiforme, angioneurotic edema and erythema.

3. Doerr, R.: Ueber Allergie und allergische Hauterkrankungen, Arch. f. Dermat. u. Syph. **151**:7, 1926.

4. Trumbull, J. A.: Disturbances Caused by Proteins, Boston M. & S. J. **182**:493, 1920.

Low,[5] in his volume on anaphylaxis and sensitization, discussed about twenty-five skin diseases. This number, however, includes bacterial sensitization in reference to skin diseases and probable instances of such, for example, alopecia areata, lichen planus, etc.

BACTERIAL SENSITIZATION

A discussion of bacterial sensitization is a part of pathology and immunology. It is of importance in clinical dermatology in visualizing the immunologic aspects of syphilis and in elucidating such lesions as the tuberculids and the trichophytids. It has a wide aspect in the consideration of an infection having a cutaneous expression.

CUTANEOUS HYPERSENSITIVENESS

Dermatitis.—Cutaneous hypersensitiveness that concerns hypersensitiveness apparently exists only in the skin. It is manifested by the occurrence of a dermatitis, indistinguishable from what is called eczema, after contact with the sensitizing substance, which includes a great number of protein and nonprotein substances (figs. 2, 3 and 4).

It is the most frequent and one of the most important phases of hypersensitiveness encountered by the dermatologist. A considerable percentage of patients with so-called eczema is in reality an instance of this phase. Its clinical importance is further shown because of the difficulty in eliciting the sensitizing substance and because of its economic importance in industrial medicine.

Considerable detective work is frequently necessary to discover the idiosyncratic substance. The following serve as clues: The acuteness of the dermatitis which at times exceeds that seen in an analogous dermatitis called eczema; the involvement of exposed parts associated with involvement of the male genitalia; a linear formation of erythematous vesicular lesions, which suggest an external origin (a type of lesion, for example, resulting from an idiosyncratic plant brushing against the skin); localization of the eruption, as on the scalp and forehead, from hair tonics; the lips and adjacent area, from dentrifices; around the neck, from fur pieecs, hence an acute recurring eruption at the same area; specificity of the appearance of an acute dermatitis in relation to time and place. Knowledge of the large number of reported idiosyncratic substances is helpful in determining the offending agent in a given case.

The following instances illustrate the foregoing statements: Every Sunday night, for two months, Rosenberger's[6] patient developed a

5. Low, R. Cranston: Anaphylaxis and Sensitization, Edinburgh, W. Green & Son, Ltd., 1924, p. 190.

6. Rosenberger: Newspaper Ink Dermatitis: Case Report, Arch. Dermat. & Syph. **14**:472 (Oct.) 1926.

dermatitis of the hands and face which was found to be due to sensitization to newspaper ink used to print the rotogravure section of the Sunday newspaper. In the case reported by Rowe and Rogers,[7] the patient had an eczematous eruption on the forearm which came into contact with the arm of an upholstered mohair chair. This was found to be due to sensitization to goat hair. Engman and Wander [8] reported a case, that of a man who suffered strange attacks of a recurrent dermatitis of the face. The dermatitis was due to sensitization of a bleach his wife used for her hair, which affected his skin, as he rested his cheek against her hair or against the pillow that she had used.

At times an almost incredibly small amount of the sensitizing substance suffices to produce the dermatitis. This is well shown in a remarkable case reported by Hall.[9] A chemist was so highly sensitized to the fumes of phenyldrazine and benzoldehyde that he suffered an attack of acute dermatitis following the visit of an assistant who was exposed to these fumes and who had walked about a mile to make the visit.

Certain pollens, such as ragweed, timothy grass and oak, may constitute the sensitizing substance in the causation of a dermatitis.[10] Such instances have been reported by Sutton,[11] Walker [12] and by Engman and Wander.[8] In these patients, however, the dermatitis was usually accompanied by somatic symptoms of hypersensitiveness.

Dermatitis appears at the site of contact with the sensitizing substance, as well as, at times, at remote areas, apparently not due to trans-

---

7. Rowe, Albert H., and Rogers, Hobart: Allergic Dermatitis: Report of a Case Due to Mohair, California & West. Med. **23**:1589, 1925.

8. Engman, M. F., and Wander, W. G.: The Application of Cutaneous Sensitization to Diseases of the Skin, Arch. Dermat. & Syph. **3**:223 (March) 1921.

9. Hall, Arthur: Repeated Attacks of Eczema Produced by Phenyl Hydrazin-Hydrochloride, Brit. J. Dermat. **11**:112, 1899.

10. Dr. H. E. Menage of New Orleans and Dr. J. R. Allison of Columbia, S. C., related to me a number of cases of patients whose acute dermatitis was in all probability due to contact with certain pollens. It is frequent in their experience in the southern states, appearing in the late summer, commonly associated with hay-fever or asthma. Isolating the patient in the upper stories of a high building is very efficacious therapy. It is interesting to correlate this experience with what van Leeuwen (Allergic Diseases, Philadelphia, J. B. Lippincott Company, 1925, p. 113) calls allergic diseases of certain climates presumably due to allergens (climate-allergens or miasms) occurring in the air, consisting of decomposed material or products of metabolism of animal or vegetable parasites, the occurrence of which in certain regions is due to the influence of climate, humidity of air, temperature, etc. Treatment is carried out in pure air by means of especially built chambers which van Leeuwen calls miasmproof rooms.

11. Sutton, R. L.: Ragweed Dermatitis, J. A. M. A. **73**:1433 (Nov. 8) 1919.

12. Walker, I. C.: Causation of Eczema, Urticaria and Angioneurotic Edema by Proteins Other Than Those Derived from the Food, J. A. M. A. **70**:897 (March 30) 1918.

mission of the idiosyncratic substance by the patient's hands. This has been ascribed either to the absorption of the substance or to the operation of an ill defined nerve mechanism, called the "cutaneous reflex." In Hartzell's [13] patient, who was sensitized to iodoform, the mere picking up of a piece of iodoform gauze with the thumb and finger was followed in a few hours by a dermatitis which spread over the cutaneous surface. It is difficult to explain through absorption the appearance of the dermatitis at remote areas because of the following considerations:

In a state of hypersensitiveness, the mucous membranes are exempted. This is evidenced in the case reported by Low,[5] in which the patient was sensitized to iodoform. After an iodoform pack had been inserted in the vagina, she developed an acute dermatitis confined to the vulva and contiguous parts. Moreover, cutaneous idiosyncratic substances may be ingested without affecting the mucous membrane, and usually without causing a cutaneous reaction. Instances are well known in which patients sensitized to *Rhus toxicodendron* have chewed and eaten the leaves of the plant without harmful effects. On the other hand, a cutaneous reaction may be provoked by the oral administration of the tincture of *Rhus toxicodendron*.

Comparable to "fixed drug eruptions," cutaneous hypersensitiveness may be localized to certain areas which alone react to the sensitizing substance.

As far as I am aware, it has not been shown that cutaneous hypersensitiveness exists at birth. Apparently it is acquired, at least in the majority of persons, after a variable period of exposure. In case 1, that of a dentist, sensitization to procaine hydrochloride appeared after daily contact with the drug for two years. Familiar instances are known of laboratory workers who through repeated contact become hypersensitive to the hair of animals; of chemists who become intolerant to a variety of drugs, and of workers in the industries and professions who develop sensitization after years of exposure.

It is an important fact that many persons who have a dermatitis caused by a certain irritant, such as for example, formaldehyde, become increasingly sensitive to this irritant, so that eventually the slightest exposure is capable of producing a dermatitis, and each attack disappears less readily, until a chronic dermatitis is established which may continue for months, and even years after the removal of the cause. Examples of this are frequently seen in the so-called trade eczemas.

I am not acquainted with any reported studies concerning the rôle of heredity in the causation of the type of cutaneous hypersensitiveness now under discussion, nor of studies concerning its evolution. In this

13. Hartzell, M. B.: Diseases of the Skin, Philadelphia, J. B. Lippincott Company, 1917, p. 213.

phase of hypersensitiveness, hereditary influences are apparently not operative, which is in contrast to the other phases presently discussed.

Cutaneous hypersensitiveness usually exists unchanged for years. In the patient whose case is reported in case 2, hypersensitiveness to dyed black silk is as great at the age of 61 as it was when she was a child, when it first appeared. Her daughter develops urticaria each time she eats strawberries. In both patients, there are no other symptoms of hypersensitiveness.

In contrast to the foregoing case, I am occasionally informed by patients who are sensitized to *Rhus toxicodendron,* that there are times in which they can handle the plant with impunity.

Pruritus.—Pruritus may be the only cutaneous reaction after contact with an idiosyncratic substance. This doubtless can be attributed to a minimum of exposure or to a slight degree of hypersensitiveness, as reported in case 1, in which a dentist who was sensitized to procaine hydrochloride developed itching of the hands after wearing rubber gloves which had previously been worn when injecting procaine, and which had been washed and dried. Similar cases have been reported by Lane.[14] Whitfield's patient experienced itching each time she handled a rug made of an animal hide. In patients belonging to the group of those suffering from cutaneous and somatic hypersensitiveness, to be discussed later, itching as an isolated cutaneous reaction may accompany attacks of asthma and hay-fever after exposure to the sensitizing substance. In acute attacks of hypersensitiveness, generalized itching usually precedes erythematous or urticarial eruptions and acute somatic symptoms. Engman and Wander [8] stressed pruritus of the face and extremities as an initial symptom after ingestion of the sensitizing food in their cases of infantile eczema of the hypersensitive type.

CUTANEOUS AND SOMATIC HYPERSENSITIVENESS

Patients with cutaneous and somatic hypersensitiveness have cutaneous as well as constitutional reactions. This phase includes all cases of so-called serum sickness and what has been called acute anaphylactic shock and acute attacks of hypersensitiveness. It also includes cases of eczema, pruritus, urticaria or angioneurotic edema, in which an associated asthma or hay-fever develops after contact by inhalation or ingestion of a protein or nonprotein substance. Instances of this phase of hypersensitiveness are familiar to all, and may be divided into the following groups: Group 1, hypersensitiveness to animal proteins, especially horse, dog and cat dander, chicken feathers and rabbit hair;

14. Lane, C. Guy: Novocain Dermatitis in Dentists, Dental Cosmos, Sept., 1921, p. 878.

group 2, hypersensitiveness to foodstuffs, especially egg, milk, wheat, shell fish, pork and strawberries; group 3, hypersensitiveness to pollens, and group 4, hypersensitiveness to drugs.

SOMATIC HYPERSENSITIVENESS

In this phase of allergy, there is a cutaneous expression of a somatic hypersensitiveness. This phase includes cases in which eczema, urticaria, angioneurotic edema or erythema multiforme develop after ingestion of a protein or nonprotein substance, but principally after a food. Urticaria or angioneurotic edema in adults is perhaps the most frequent reaction in this group, since the cutaneous expression of a food sensitization more likely occurs as urticaria than as eczema. Indeed, in adults, the occurrence of eczema after ingestion of a sensitizing food is uncommon. In infants, however, eczema is more frequently a symptom of hypersensitiveness than urticaria.

Erythema multiforme is an uncommon cutaneous reaction of hypersensitiveness. Mention may be made of the following reports in which food sensitization was the cause; the foods causing the sensitization were: pork chops, blackberries, nuts and lobster, as reported by Fordyce,[15] by Engman [16] and by Galloway.[17]

This phase also includes cutaneous reactions to ingestion of drugs, one phase of the so-called idiosyncrasies, so far as such reaction conforms with the definition of hypersensitiveness, in which the action of the drug is meditated by a special mechanism, the underlying basis of hypersensitiveness. The cutaneous reaction to phenolphthalein can be taken as a typical example, whereas, eruption due to pharmacologic reactions to drugs, dependent on direct action of the drug on certain tissues or cells, should be excluded. To almost every drug, considerable individual variations occur, which are of a purely quantitative nature. The acquired tolerance to certain drugs, for example, morphine, alcohol and nicotine, is not regarded by pharmacologists as comparable to desensitization or hyposensitiveness. It is doubtful if all eruptions caused by drugs are dependent on a specifically altered reaction of hypersensitiveness, and hence should be regarded as phenomena of hypersensitiveness.

ECZEMA AS A SYMPTOM OF HYPERSENSITIVENESS

Eczema as a symptom of hypersensitiveness has been partly considered in discussing the following types of hypersensitiveness: cutaneous, cutaneous and somatic and somatic.

---

15. Fordyce, J. A., in discussion on Protein Sensitization in Skin Diseases; Urticaria and Its Allies, Arch. Dermat. & Syph. **2**:571 (Nov.) 1920.

16. Engman, W. F., in discussion on Toxic Dermatoses, J. Cutan. Dis. **30**:166, 1912.

17. Galloway, J.: Erythemata as Indicators of Disease, Brit. J. Dermat. **15**: 235, 1903.

It will be seen in table 1 that a large percentage of patients with eczema have positive cutaneous reactions which are nonspecific in contrast to those patients in whom the positive reactions are specific. In the interpretation of positive cutaneous tests, nonspecific, in patients who have only eczema, it should be considered that the skin of patients with eczema is in a heightened state of irritability, as shown by the work of Weidenfeld,[18] Schultz,[19] Hammer,[20] Bloch [21] and others. After the eczema subsides, this increased reactibility approaches the normal standard. The studies of Luithlen,[22] and more recently, those of Klauder and Brown,[23] Toyama [24] and Hayashi [25] have shown that in rabbits and in cats the irritability of the skin intimately concerns the calcium-potassium ratio in the skin, and that this ratio, like the irritability of the skin, can be influenced by different conditions.

As presently shown in discussing the allergic state, there is another group of patients with eczema whose cutaneous tests are positive and may be nonspecific. Here the eczema is usually of a distinctive type, and other symptoms of hypersensitiveness are frequently associated. This is shown in case 3. In this group, the diagnosis of hypersensitiveness is suggested more than in the other group, in which there is only eczema and positive cutaneous tests.

URTICARIA AS A SYMPTOM OF HYPERSENSITIVENESS

It appears that a number of different stimuli may lead to capillary dilatation in the skin of man, increase of permeability and exudation with the production of a wheal. The mechanism of urticaria has been much discussed, with considerable difference of opinion. The nervous origin

---

18. Weidenfeld, S.: Beitrage zur Pathogenese des Ekzems, Arch. f. Dermat. u. Syph. **111**:891, 1912.

19. Schultz, J. H.: Die Prüfung der Hautreaktion auf chemische Reize, Jahrb. f. Kinderh. **78**:347, 1913.

20. Hammer, F.: Ueber Hautreize und deren Verwendung, Dermat. Wchnschr. **75**:969, 1922; ibid., 996-1006.

21. Bloch, B.: Eczema and Diathesis, Ztschr. f. klin. Med. **99**:2, 1923.

22. Luithlen, F.: Veränderungen des Chemismus der Haut bei verschiedener Ernährung und Vergiftungen, Arch. f. exper. Path. u. Pharmakol. **69**:365, 1912.

23. Klauder, J. V., and Brown, H.: Experimental Studies in Eczema: I. Study of the Sensibility of the Skin of Rabbits to Chemical Irritants Under Experimentally Induced Conditions, Arch. Dermat. & Syph. **11**:283 (March) 1925; Experimental Studies in Eczema: II. A Correlation of the Chemistry with the Irritability of the Skin of Animals Under Normal and Under Experimentally Induced Conditions, ibid. **15**:1 (Jan.) 1927.

24. Toyama, I., and Hayashi, H.: Studies on Lacquer Dermatitis: V, Japanese J. Dermat. & Urol. **26**:1091, 1926.

25. Hayashi, H.: Experimentelle Studien über die Empfindlichkeit der Haut gegen aussere Reize, Japanese J. Dermat. & Urol. **26**:721, 1926.

TABLE 1.—*Positive Cutaneous Reactions and Specific Reactions in Eczema, Urticaria, Angioneurotic Edema as Reported by Various Authors*

	Clinical Data	Number of Cases	Per Cent Positive Cutaneous Reactions	Specific Reactions; Results After Eliminating Sensitizing Substance*
Blackfan: Am. J. Dis. Child. **11**: 441 (June) 1916	Eczema in childhood	27	82	Two improved, 2 improved and relapsed, 2 partly improved
Corper: Am. J. Dis. Child. **29**: 355 (March) 1925	Eczema under 1 year	100	53	Thirty-eight of 53 studied; 8 breast fed, 5 improved, 1 cured; 9 breast and bottle fed, 4 improved, 1 cured; 21 artificially fed, 11 improved, 4 cured
Fox and Fisher: J. A. M. A. **75**: 907 (Oct. 2) 1920	Eczema in adults	60	59	Not definitely stated; 1 case cited, cabbage, cured
Herman: Am. J. Dis. Child. **24**: 221 (Sept.) 1922	Eczema in infancy and childhood	11†	100	Sensitive to food alone, 11 cases; 5 cured, 3 well, 2 markedly improved, 1 partly improved
O'Keefe: Boston M. & S. J. **183**: 569, 1920	Eczema in infancy and childhood†	70	41	Three definite cases, casein, codfish, cured
Rackemann: Am. J. M. Sc. **163**: 87, 1922	Eczema in adults	21	19	"In no case was finding of any clinical importance"
	Eczema in children	19	42	Eight positive; in 4 excellent clinical results; sensitive to egg
	Urticaria in adults and children	35	17	Four cases in adults, not improved; 2 cases in children, improved
Ramirez: Arch. Dermat. & Syph. **2**: 365 (Sept.) 1920	Eczema in adults and children	78	38	Thirty positive; 10 cured, including hay-fever, asthma associated with eczema "only a small per cent of all cases of eczema are anaphylactic"
Schloss: Am. J. Dis. Child. **19**: 433 (June) 1920	Eczema in infants	74	65	Four definite cases sensitive to food; when removed either cured or much improved
Sidlick and Knowles: Am. J. Dis. Child. **23**: 316 (April) 1922	Eczema in infants and childhood	23	65	Fifteen positive; 6 cured, 3 marked improvement
	Papular urticaria (childhood)	12	75	Nine positive; 3 cured, 4 markedly improved
Engman and Wander [3]	Urticaria in adults	19	79	"All improved under proper restriction of diet"
	Eczema in children	36	78	Majority diet uncontrolable; in all cases when possible, good results
Low: Anaphylaxis and Sensitization, 1924	Eczema (21 cases); urticaria (8 cases); prurigo (4 cases)	34	17	Six positive; 1 cured; sensitive to beef and chicken, case of eczema in child
Piness and Miller: Arch. Dermat. & Syph. **14**: 145 (Aug.) 1926	Allergic dermatitis under 10 years	118	88	Number of specific reactions not definitely stated; seven specific reactions cited; 5 sensitive to wheat; 1 to orris powder; 1 to flaxseed
	Allergic dermatitis over 10 years	175	61	
	Urticaria only	24	58	
	Eczema only‡	77	63	
Haxthausen [41].....	Skin diseases	200	..	"Eliminating substance giving positive reaction resulted in improvement in only isolated cases"
Menagh: J. A. M. A. **90**: 668 (March 3) 1928	Angioneurotic edema and urticaria	260	58.7	58.7% considered allergic; 30% discovered etiology; 11.2% hypersensitive plus infection of biliary tract; 48.8% infection of biliary tract; 10 no etiologic clue

* In some reports it was difficult to ascertain the exact number of specific reactions since it was not always definitely stated. The number of specific reactions cited were taken as the total. In the absence of a contrary statement it was presumed that these cases represented the total. The accuracy of the percentage of specific reactions summarized in table 2 is founded on this presumption.

† Total cases, thirty, including asthmatic cases, faulty feeding, etc. Of this number eleven cases sensitized to food.

of the complaint has been championed, especially by Kreibich,[26] who maintained that wheals are due to the irritation of sympathetic cells through sensory irritants. Török and Hari [27] considered wheals the result of toxin. A primary alteration of the capillary walls is assumed as a cause by others. Still others maintain that a change in the metabolic activity of tissue cells constitutes the mechanism. The latter view embraces the cell asphyxia hypothesis of Samberger as a cause of the wheal.

The nervous origin of the wheal is perhaps substantiated by the following considerations: Bruck,[28] by long-continued stimulation of one glossopharyngeal nerve in the frog, caused a pronounced edema in the part of the tongue innervated. The mechanism in the production of the lesions of herpes zoster is evidently purely nervous.

Many poisonous substances derived from protein produce urticarial eruptions when introduced into the system. Histamine is a notable instance, as shown by the work of Dale and his associates. Philippson [29] Török and Hari [27] and Pilcher and Sollmann [30] produced urticarial reactions after local introduction into the skin of small quantities of various substances which were generally either definite capillary poisons producing local exudation or belonged to the heterogeneous group of "inflammatory poisons."

Experimentally, the mechanism in the production of the wheal apparently differs fundamentally in different cases. This difference can be correlated with the various causes of urticaria as seen from a clinical visualization.

Urticaria, as a symptom of hypersensitiveness, occurs in serum sickness; in association with hay-fever or asthma; as an isolated phenomenon due to the ingestion of foods, particularly shell-fish, strawberries, egg, buckwheat and after contact with protein and nonprotein substances, such as jellyfish and Portugese man-of-war. Further illustrations of this cause are seen in the following case reports: The patient whose case was reported by Stern [31] was sensitized to rubber. Urticaria developed

---

26. Kreibich, C.: Die angioneurotische Entzündung, Wien, 1905.

27. Török and Hari: Experimentelle Untersuchungen über die Pathogenese der Urticaria, Arch. f. Dermat. u. Syph. **65**:21, 1903.

28. Bruck, C.: Experimentelle Beiträge zur Aetiologie und Pathogenese der Urticaria, Arch. f. Dermat. u. Syph. **96**:241, 1909.

29. Philippson, M. M.: Ueber das flüchtige Reizödem der Haut, Arch. f. Dermat. u. Syph. **65**:387, 1903.

30. Pilcher, J. D., and Sollmann, J.: Endermic Reactions: I, J. Pharmacol. & Exper. Therap. **9**:309, 1917.

31. Stern, Grete: Angioneurotic Edema, Hypersensitiveness to Rubber as Cause of Urticaria, Klin. Wchnschr. **6**:1096, 1927.

each time a hard rubber dental plate was worn. Face paint was the cause of urticaria in the case reported by Highman and Michael.[32]

Patients with urticaria who are hypersensitive to a food, the pathogenicity of which is established by cutaneous tests, frequently suspect or recognize the offending food. Such patients are not likely to seek a consultation; thus, in a considerable percentage of patients with urticaria, the cause is obscure and cannot be detected by cutaneous tests. A certain number have positive cutaneous reactions which are nonspecific. In these patients, the history and concomitant symptoms warrant the diagnosis of the allergic state. Such an instance is shown in case 5. In patients of this type, the cutaneous tests merely serve to diagnose the allergic state.

Hypersensitiveness cannot explain all phases nor all instances of the disease. Hypersensitiveness as a cause of chronic urticaria has probably been overemphasized. There are other causes which are apparently remote from that of hypersensitiveness, for example, the psychogenic cause; cases exemplifying this were reported in my studies on the cutaneous neuroses.[33] Concerning this type of case Hyde and Montgomery[34] said so aptly, "The widow must set aside her veil, beneath which the urticaria plays."

Another cause is the reflex cause, of which Oliver[35] reported a striking example due to a refractive error and the classic case of hebra in which urticaria developed subsequent to the passing of a sound. A discussion of other causes of urticaria is beyond the scope of this paper.

THE ALLERGIC STATE

The allergic state is one in which a person is always hypersensitive to one, and usually, to a number of protein and nonprotein substances; this hypersensitiveness is clinically characterized by a syndrome comprising a combination of the following symptoms: hay-fever, asthma, urticaria, angioneurotic edema and eczema. The latter is characterized by its chronicity, lichenification and its localization to the surfaces of the face, neck and joints. Other symptoms of the allergic state are vasomotor rhinitis, migraine, dizziness and Ménière's syndrome, bladder tenesmus, asthenia, hypotension and eosinophilia.

---

32. Highman, Walter J., and Michael, Jeffrey C.: Protein Sensitization in Skin Diseases, Urticaria and Its Allies, Arch. Dermat. & Syph. **2**:544 (Nov.) 1920.

33. Klauder, J. V.: The Cutaneous Neuroses, J. A. M. A. **85**:1683 (Nov. 28) 1925.

34. Hyde, J. U., and Montgomery, F. H.: Diseases of the Skin, Philadelphia, Lea & Febiger Company, 1905, p. 223.

35. Oliver, C. A.: A Brief Note on a Case of Reflex Irritation (Urticaria and Eye Strain), Philadelphia M. J., Jan. 14, 1899.

In the allergic state, the mechanism by which normal people become protected against foreign protein and nonprotein substances is absent. The normal operation of this defending mechanism leads to a state of immunization, but its absence leads to a state of sensitivity.

The nature of this mechanism is not known. One feature common to it is that it is a qualitative, cellular alteration within the species (Coca and Cooke [36]). The observations of Cooke and Vanderveer [37] supported the conclusion that there is a definite inheritance of capacity for sensitization, transmitted according to mendelian laws as a dominant characteristic, but that the specific form of sensitization is acquired in the course of life by contact. This inheritance capacity for sensitization concerns an increased permeability of the mucous membrane to antigenic substances and an alteration in the reticulo-endothelial system which lead to capillary permeability. A derangement in the functioning of the vegetative nervous system is apparently involved.

The separation of the phenomena of hypersensitiveness into the conclusive and inconclusive phases is purely clinical. Basically, the mechanism is doubtless the same, with a varying clinical expression. One definite clinical distinction, which is the basis of the aforementioned separation, concerns the specificity or nonspecificity of the positive cutaneous tests. The patient whose cutaneous reactions are positive but nonspecific is in a hypersensitive state only as these cutaneous tests are positive.

Normal persons do not react in this manner. It is a seeming paradox that either contact with, or avoidance of, the sensitizing substances to which they are hypersensitive does not always influence the symptomatology of their state. The positive but nonspecific cutaneous tests in these patients connote, then, a "constitutional peculiarity" or "altered reactivity" that characterizes the state of hypersensitiveness (allergic state) and which constitutes the pathogenesis of their symptoms. "The atopic man is qualitatively unlike the normal man." (Coca.)

So far as concerns the clinical recognition of this peculiarity, the term, allergic state, is "old wine with a new label." Reference is made to the comparable or identical state described by Czerny as "exudative diathesis." This clinical entity, in which Czerny included eczema and asthma, fits in so well with what is now called hypersensitiveness that it is probable that most of its symptoms are manifestations of it. This likewise applies to that state called "eosinophilia diathesis" and to "prurigo diathesis."

---

36. Coca, A. F., and Cooke, R. A.: Phenomena of Hypersensitiveness, J. Immunol. **8**:163, 1923.

37. Cooke, R. A., and Vanderveer, Albert: J. Immunol. **1**:201, 1916.

It is interesting to recall that in 1892, Besnier [38] selected from the chaos of what was called prurigo, a special form—the prurigo diathesis—a chronic malady with seasonal variations. It often began in early infancy and was characterized by intense itching, usually an initial symptom, and later by an eruption of lichenoid plaques localized frequently on the face, extremities, surfaces of the neck and joints, and complicated with bronchial asthma, hay-fever and ichthyosis. It is of further interest to recall that Brocq accorded hereditary cross-breeding an important rôle in the causation of the prurigo.

The skin diseases which are part of the syndrome of the allergic state may be envisaged by the dermatologist as a familial tendency, occupying an important place in the category of recessive hereditary characteristics of which epidermidolysis bullosa, ichthyosiform erythroderma and xeroderma pigmentosum are notable examples.[39]

VAGOTONIA AND THE ALLERGIC STATE

The syndrome of the allergic state greatly resembles the syndrome of vagotonia described by Eppinger and Hess.[40] This applies to symptoms referable to a disturbance of the sympathetic nervous system as well as to other symptoms, such as hypotension, asthenia and eosinophilia. Frequently, a clinical distinction cannot be made between the two morbid states, as is shown in cases 4 and 5. Except to point out the clinical resemblance, one is not justified in making further conclusions. The hypothesis, however, seems warranted that in both conditions a basically deranged functioning of the vegetative nervous system is concerned, in which endocrine dysfunction, especially hypo-adrenia and a disturbed calcium-potassium ratio, are apparently involved.

It is perhaps not without significance that the same drugs—atropine, epinephrine and calcium—are effective as treatment in the allergic state as well as in vagotonia.

---

38. Besnier, E.: First Note and Preliminary Observations to Serve as an Introduction to the Study of the Prurigo Diathesis, Ann. de Dermat. et de Syph. **3**:634, 1892.

39. In a visualization of the pathogenesis of skin diseases, the principles of heredity are of importance to the dermatologist. A valuable collection of pedigrees illustrating mendelian descent, chiefly of several conditions of the skin and hair, have been reported by Gossage: The Inheritance of Certain Human Abnormalities, Quart. J. Med. **1**:331, 1908. Bateson, W.: Mendel's Principles of Heredity, Cambridge University Press, 1909. Hugo Die Mutations Theorie, Veit & Company, vols. 1 and 2, 1901-1903.

40. Eppinger, H., and Hess, L.: A Clinical Study in Vegetative Neurology, translation by Kraus, M., and Jelliffe, S. E.: New York, Nervous and Mental Disease Publishing Co., 1915.

STATUS OF THE CUTANEOUS TESTS

Cutaneous tests to determine hypersensitiveness are of most value for patients belonging to the group afflicted with the condition herein discussed as cutaneous hypersensitiveness. In these patients, it is possible to test with the sensitizing substance in toto—contact reaction—which is generally preferable to the use of extracts. A positive reaction to the sensitizing substance is obtained in all cases, and is conclusive, since it is an experimental reproduction of the dermatitis (fig. 4).

In the other phases of hypersensitiveness, the cutaneous tests may be of considerable value in determining the substance causing the symptoms, or of limited value, because of nonspecific reactions. In the latter event, the cutaneous tests serve to diagnose the state of hypersensitiveness rather than to define the substance causing its clinical manifestations.

Table 1 was compiled in order to determine the number of specific cutaneous reactions obtained in a large number of patients with eczema,

TABLE 2.—*Summary of Table 1: Average Per Cent Positive Cutaneous Reactions and Average Per Cent Specific Reactions*

	Number of Cases	Average per Cent Positive Cutaneous Reactions	Average per Cent Specific Reactions
Eczema in infancy and childhood	298	72.8	9.4
Eczema in adults	81	39.0	1.2
Urticaria in adults and childhood	326	57.4	24.0
Grouped cases of eczema and urticaria	405	51.0	4.4
Final summary	1,110	55.0	9.7

urticaria and angioneurotic edema. Table 2 is a summary of table 1 and shows the average percentage of positive cutaneous reactions compared to the average percentage of specific reactions.

In Haxthausen's [41] study of 200 patients with skin diseases in which he applied the conventional cutaneous tests, he observed that the elimination of that substance which gave a positive cutaneous reaction rarely resulted in appreciable improvement. It was observed that a positive reaction in one area was likewise positive in other areas, and that the disease was not aggravated by ingestion, injection or local application of those substances which yielded a positive reaction. He concluded that no more was accomplished by cutaneous testing than by prescribing a restricted diet of milk and vegetables.

Van Leeuwen [42] observed that extract of human dandruff gives positive reactions in practically all patients with hypersensitiveness. He

41. Haxthausen, H.: Untersuchungen über Cutanreaktionen bei Hautkrankheiten, Arch. f. Dermat. u. Syph. **151**:85, 1926.

42. Van Leeuwen, W. S.; Bien, Z., and Varekamp, H.: München. med. Wchnschr. **69**:1690, 1922.

therefore advocated making a single intravenous injection of such extract, together with one control injection of physiologic sodium chloride, in order to diagnose the state of hypersensitiveness. Later, van Leeuwen [43] found that some of these extracts also gave positive tests in normal persons. However, this nonspecific irritant could be removed by filtration through collodion membrane. More recently, the same author [44] said that nearly all asthmatic patients sensitive to animal danders are sensitive to human dander extract. He estimated that this test shows from 90 to 95 per cent positive in patients with hypersensitiveness, but never in normal persons. Van Leeuwen,[45] commenting on the practical value of these tests, said:

> In cases of asthma, the diagnosis of allergic state is for the most part simple enough, but in cases of urticaria, eczema and other skin diseases, and generally in cases of migraine, it is often extremely difficult to determine the presence of allergic disease. In these cases a diagnostic injection of the extract of human dandruff may be very useful.

Feinberg and his associates [46] tested twenty asthmatic patients of the allergic type according to van Leeuwen's method and obtained a positive reaction in all, whereas, nonallergic patients gave negative results.

REPORT OF CASES

CASE 1.—*Hypersensitiveness to Procaine Hydrochloride.*

Dr. A., a dentist, presented a subacute dermatitis involving the dorsal surfaces and interdigital spaces of the third and fourth fingers of the right hand (fig. 2). There was a sharply marginated, erythematous, scaly eruption which itched severely. The eruption had existed almost constantly for eighteen months, although for the last eight months of that time the patient had been treated locally for what he was told was "eczema." During this treatment, all local applications had been without avail. The palmar surface of the right hand and the entire left hand were uninvolved.

The patient was particularly questioned concerning the use of procaine hydrochloride. The following history was obtained: Almost daily for two years, he had employed a 2 per cent solution of procaine hydrochloride for local anesthesia, the solution being injected by means of a small syringe held chiefly with the second and third fingers of the right hand and with the hand held in an upright position. In this manner, a few drops of procaine were frequently spilled on the backs of these fingers and would flow over the back of the hand.

The following cutaneous test was performed: On a small area of scarification on the right forearm was placed a drop of a 2 per cent solution of procaine. The

---

43. Van Leeuwen, W. S.; Bien, Z., and Varekamp, H.: München. med. Wchnschr. **70**:604, 1923.

44. Van Leeuwen, W. S.; Bien Z., and Varekamp, H.: Klin. Wchnschr. **5**:1023, 1926.

45. Van Leeuwen, W. S.: Allergic Diseases, Philadelphia, J. B. Lippincott Company, 1925, p. 41.

46. Feinberg, S. M.; Taub, S. J., and Unger, Leon: The Non-Specific Diagnosis of Allergic Asthma. A Method of Diagnosis of the Presence of Allergic Disease by Means of a Single Intradermal Test, Ann. Clin. Med. **5**:1124, 1927.

control consisted of scarification without the application of the drug. A sterile dressing was applied. At the end of about twenty-four hours, the site of the tested area was definitely erythematous, and there was considerable itching, which continued for three days. The control was negative.

An additional cutaneous test was made in the following manner: The moist end of the cork from the bottle of a 2 per cent solution of procaine hydrochloride was merely touched on the skin of one finger of the left hand. Twenty-four hours later, a circular area of erythema developed at this site.

The patient was advised to discontinue the use of procaine hydrochloride, which resulted in a prompt disappearance of the dermatitis. His experience with the use of rubber gloves, in the hope of continuing the employment of the drug, is of interest. After he had given an injection of procaine with gloved hands, the

Fig. 2 (case 1).—Dermatitis on the hand of a dentist due to procaine hydrochloride. Hypersensitiveness developed after handling the drug almost daily for two years.

hands (with the gloves worn) were washed under running water and dried. The gloves were removed and again washed inside and outside in a basin of soapy water and then dried. The same gloves were again worn in such a manner that the outside of the glove originally worn on the right hand was now worn on the inside on the left hand. This resulted in itching of the left hand, which persisted for a few days. The foregoing experiment was repeated several times with similar results.

CASE 2.—*Hypersensitiveness Only to Black Silk Causing Dermatitis as a Sole Reaction.*

Mrs. W., aged 61, had had her first attack of dermatitis involving the neck and arms at about the age of 6, when she had worn a black silk dress. She recalled another attack at about the age of 11, when she had worn a black silk

jersey. At this time acute dermatitis had particularly involved the upper part of the back and had been so severe as to incapacitate her. She also recalled that on many occasions, after wearing a black silk veil, a red band had appeared around the neck due to the veil encircling the neck. At about the age of 35, she had discovered her hypersensitivity to black silk. On this occasion, she had worn a garment made of both black and white silk. Dermatitis had appeared at the sites covered by the black silk part of the garment. Dermatitis develops more easily after the wearing of black silk in hot weather. She is able to wear black silk provided it does not touch the skin. For example, she wears two pairs of white hose under black silk hose. The hypersensitiveness is as marked now as it was at the age of 6. She is not hypersensitive to white silk or any dyed silk other than the black, nor to black cotton, or other dyed material, black or otherwise. There

Fig. 3 (case 2).—Dermatitis due to sensitization to black silk appearing at site of contact with black silk rubber straps, part of an undergarment. The hypersensitiveness was first noticed at the age of 6 and is just as great now at the age of 61. The dermatitis is the only evidence of hypersensitiveness. There is no reaction to white silk or to black cotton or other dyed material.

are no other symptoms of hypersensitiveness and no family history of hypersensitivity. Her daughter develops urticaria when she eats strawberries, but otherwise does not have any evidence of hypersensitiveness.

Figure 3 is a photograph of the patient and shows an area of dermatitis appearing at the site of contact with black silk rubber straps, part of an undergarment.

CASE 3.—*The "Allergic" Type of Eczema Associated with Asthma.*

A man, aged 28, did not know of any history of hypersensitiveness in his immediate family, but concerning other relatives he could not give any information. He had had eczema for twelve years and asthma for five years. The asthma was worse during the summer months, but was also present during other months. The

eczema involved the face, neck, flexor surfaces of the forearms and knees, being most pronounced on the flexor surfaces of the elbows and on the knees. It was of the chronic type; the skin was thickened, moderately red and scaly and lichenoid. Other symptoms of hypersensitiveness were not noted.

Physical examination disclosed infected tonsils and polypoid degeneration in both nostrils and typical signs of asthma. The blood pressure was 120 systolic and 90 diastolic; the pulse rate, 80. The differential blood count was normal, except for an eosinophil count of 6 per cent. The blood calcium was 8.9 mg. per hundred cubic centimeters, and the blood potassium, 19.2 mg. per hundred cubic centimeters.

The patient at one time had attended the asthma clinic at Jefferson Hospital, from which the following information was obtained: The roentgenographic

Fig. 4.—Contact reaction as a diagnostic method of determining sensitization to idiosyncratic substances. A piece of primrose leaf and flower were bandaged to an area of the skin of the arm. About ten hours later itching appeared at the site, later redness, swelling and vesicles. This patient developed acute dermatitis of the hands and face only during the months of January and February. The plant is handled almost daily throughout the year. Dermatitis appears only when in contact with the plant when it blooms during these months.

examination did not show evidence of infection of any of the nasal sinuses. Increase in the peribronchial shadows in both lower lobes was doubtless the result of a bronchiectasis. Positive skin reactions were obtained to house dust; dog, cat and goat dander; chicken, duck and goose feathers; wheat, rice polish and silk.

The patient removed a dog and a cat from his household, and avoided contact with the other substances giving a positive cutaneous reaction, with the exception of wheat and house dust. This apparently did not improve his condition. The following therapy was then instituted: Potassium iodide and calcium were

administered internally; roentgen-ray treatment was applied to the involved areas, and applications of crude coal tar were given. This resulted in considerable improvement. The patient said that he was better than at any other time in the past ten years.

CASE 4.—*Pruritus Illustrating the Symptomatology of Both Vagotonia and the Allergic State.*

A married woman, aged 37, complained grievously of generalized pruritus of six months' duration and of many of the symptoms implied by the term neurasthenia. She gave a history of hay-fever, perennial until three years prior to examination, and frequent attacks of sneezing. She was underweight, easily became fatigued, and was badly constipated. She was of the visceroptotic type, with hypotension and a pulse rate of 60.

There was a marked dermographism, and the skin of the hands and feet was bluish-red, moist and cold to the touch. There was a moderate anemia and an eosinophil count of 4 per cent. The chemical examination of the blood gave normal results. Examination of the feces for parasites was negative. The urinalysis and Wassermann test of the blood were negative. Cutaneous tests performed with pollen and food extracts were essentially negative. The results of the physical examination were otherwise negative, except for apical impairment with râles, which, together with the history, suggested incipient tuberculosis, although the temperature was not elevated and a roentgenogram of the chest was negative.

The foregoing vagotonic symptoms suggested the use of epinephrine and atropine in the treatment of the pruritus. Following this therapy the condition promptly disappeared.

CASE 5.—*Vagotonic-Allergic Urticaria.*

A woman, aged 20, had had attacks of asthma when a child. They began again at the age of 16. Her paternal grandfather had asthma, and her maternal aunt had urticaria and angioneurotic edema. The patient had had mild symptoms of hay-fever each fall. Sneezing attacks first started at the age of 16, in a certain room in a hotel at the seashore (New Jersey). These attacks were brought on by dust and the smelling of perfumes, but also occurred in the absence of these circumstances, at irregular intervals and in different places. She experienced much stress and strain incident to many hardships prior to immigration from Russia. At the age of 15 she had had psychosis following recovery from typhoid fever. During her first year in America (at age of 16), she had had difficulty in learning English, which was ascribed as the cause of a "nervous breakdown" while attending high school. Urticaria had first appeared at this time. Subsequent attacks can be correlated with mental and physical fatigue incident to study, as at the time of examinations. Urticaria outbreaks occurred daily and persisted continually for weeks. She complained of being easily tired and "nervous."

The results of the general physical examination were essentially negative, except for infected tonsils. The blood pressure was 90 systolic and 65 diastolic, the pulse rate (at different times), 65.

Cutaneous tests showed a strong positive reaction to orris powder and to codfish, and a less strong reaction to mackerel and cabbage.

Contact with the substances giving positive reactions was avoided. This, however, did not influence her symptoms.

Treatment consisted of the internal administration of epinephrine and thyroid gland extract and the employment of other means to improve her general health. Her studies and work were curtailed in order to avoid fatigue. Part time confinement to bed and a sojourn at the seashore were advised. Following this regimen, the urticaria disappeared, whereas daily attacks had occurred for six weeks.

ABSTRACT OF DISCUSSION

Dr. Oliver S. Ormsby, Chicago: With the presentation of such a difficult subject as hypersensitiveness or allergy by masters such as our honored guests, Dr. Bloch and Dr. Klauder, who have presented such an array of facts, an intelligent discussion by others is almost out of the question. If one could have had the opportunity of studying Professor Bloch's paper, its discussion would have been possible, but limited as we have been to hearing the article once makes our task difficult. Among the many facts brought out, however, one can quickly arrive at some conclusions that clear up much that has been confusing in the past, and after we have had time to study and digest the material, it will be of great value to us in understanding the many problems involved.

One of the greatest difficulties in this country from the dermatologic point of view when working on this subject has been the confusion of terms, and confusion in interpreting the mechanism of the processes under consideration. The essayists have simplified the matter by using the terms hypersensitiveness and allergy as practically synonymous and by defining what is meant by the terms. There is no doubt about the fact that the principles of anaphylaxis explain the phenomena, but true anaphylaxis, which is an antigen antibody reaction governed by well known principles, is difficult to prove in some types of hypersensitiveness. In Dr. Bloch's paper, evidence was produced that the various forms of clinical hypersensitiveness produced by animal, vegetable and mineral substances and by ingested drugs are all examples of antigen-antibody reactions. Demonstrable antibodies (precipitins) do not occur in the blood, but that some similar substance is present in some of these cases is proved by local passive transfer of hypersensitiveness by the method of Prausnitz and Küstner, so well brought out by Dr. Bloch. This experimental work has opened up a new field for demonstrating the allergic phenomenon and also for isolating the sensitizing substances. That the blood stream contains sensitizing substances is proved by injecting the serum of a patient with hay-fever by the Prausnitz-Küstner method into the skin of another subject and later (from two hours to four weeks) injecting the sensitizing agent (timothy or ragweed) into the area when a positive reaction occurs—while this is essentially an antigen-antibody reaction, precipitins cannot be demonstrated in the blood, which fact has kept this form of hypersensitiveness distinct from true anaphylaxis. It may be that the antibodies concerned here are soluble and not demonstrable by the usual methods employed for their detection. The passive transfer of drug hypersensitiveness has usually resulted negatively as has also that of ivy and tuberculin in this country. With primula, on the other hand, Dr. Bloch's experiments with local passive transfer were successful. That the sensitizing substances are rapidly attached to the cells is also proved by local passive transfer, as within two hours after the injection a positive reaction may be had. It is also possible that in cases of hypersensitiveness in which passive transfer cannot be accomplished the sensitizing substances are attached to the cells and not free in the blood stream.

From the facts brought out tonight we may conclude that the mechanism of the reactions is similar if not identical in the various forms of hypersensitiveness and that is largely if not entirely of antigen-antibody production.

I agree that the cutaneous tests have been valuable but not specific. We have to rely more on the history and careful investigation to detect the sensitizing substance that is affecting the patient.

The management of these cases is of great importance. This was not discussed by the essayists. Desensitization can be accomplished to a certain point, but not entirely. Our principal effort is to protect the patients from the sensitizing agents, and that is difficult particularly in food sensitiveness.

I am sure that I express the sentiments of the members of the association when I say that we are honored in having such a master as Professor Bloch present this subject to us.

DR. HARRY L. ALEXANDER, St. Louis: I came to listen tonight and not to speak on this subject, but I appreciate the invitation to do so.

Those of us who are interested in allergy must necessarily become interested in the skin manifestations of allergy, because the skin test has been relied on to indicate the underlying, immediate etiology of many allergic manifestations. We are deeply indebted to those who developed the skin test, for it was largely responsible in bringing this subject to its present state. This test, however, has been much overdone because it has been considered specific, and I was glad to have it brought out that it is not necessarily specific. It is especially useful in such conditions as pollenosis and allergic rhinitis.

What is the skin test? It is merely the result of the contact between some antibody in the skin cells and the injected foreign substance. It is assumed that these two react, and as a result edema takes place, and this is the visual evidence of hypersensitiveness. This skin test does not occur any too frequently. The question is asked why does it appear in only from 50 to 60 per cent of cases of allergy, and why not in all? The explanation is that allergy is a localized process. If a child eats egg-white, he may not have eczema but asthma, in which case only the cells of the bronchi are sensitive. Another child who eats the same thing may have eczema and not asthma; here only the cells of the skin are sensitive. Another child may have a condition of the gastro-intestinal tract only, wherein the intestinal mucosa alone is sensitive. Unless the cells of the skin are sensitive, no skin reaction is positive. In about 50 per cent of all cases of allergy the skin is sensitive particularly in eczema, as was brought out. In urticaria it is sensitive in only a few cases, perhaps not more than 10 per cent.

We were interested to find that the skin reaction is a variable thing. If we do a skin test on one subject, and the result is markedly positive, at another time it may be less so. We wondered why this is. The answer is that if we do skin tests on different parts of the body, we may obtain a large reaction on the abdomen, on the back or in the legs, but none on the arm; or we may secure a reaction on the arm and none on the thigh. The question comes up, whether this is an anatomic difference or an uneven distribution of antibodies in the skin. It is interesting that if one does similar tests with histamine on animals, a wheal is produced. Here the question of antibody does not enter. These wheals are identical with the human wheal. If we take a dog and inject histamine into the leg, abdomen and ear, we may find a large wheal in the ear and none on the abdomen; and in another dog we may find one on the abdomen and none elsewhere. The reason for the variability of the skin test, I think, is largely a matter of capillary behavior. It may explain why it is that urticaria occurs as scattered wheals of varying size rather than as uniformly distributed lesions.

DR. HAROLD N. COLE, Cleveland: Although this phenomenon was first described by an American, Theobald Smith, and a great deal of work has been done in this country, it has remained for some of the Europeans, particularly Jadassohn and Bloch, to elucidate the subject for us.

I would like to have Dr. Bloch tell us how he feels about eruptions from the use of drugs being types of anaphylaxis and whether this would apply to all types of drugs. Some years ago we attempted some work with this in cases of potassium iodide and copaiba eruptions. In using guinea-pigs we felt that we got some evidence that this was actually an allergy, but we did not secure conclusive results.

DR. J. FRANK SCHAMBERG, Philadelphia: We surely owe a great debt to our distinguished guest from Switzerland for his admirable presentation of a complicated subject. He has given us basic concepts which are as clear as such processes can be, and I think that hereafter we will have a more concrete comprehension of the subject. The wheal is the most characteristic allergic expression in the skin, and yet we must ask whether the wheal is always an allergic expression. I should like to ask Dr. Bloch whether the urticarias which we see so often as the result of nervous shock, or nervous exhaustion, can be explained on an allergic basis. Some years ago I was connected with the hospital for contagious diseases and watched many thousands of cases of serum sickness. It is remarkable with what a degree of specificity the eruption developed after the administration of certain antitoxic serums. We were using serums from the Philadelphia Board of Health and also from the New York Department of Health; we invariably saw a scarlatiniform eruption from the material from New York within three days after the injection, and just as constantly we encountered a morbiliform eruption within seven days after the administration of the serum from Philadelphia.

We are also indebted to Dr. Klauder for his comprehensive presentation of this most intricate problem.

DR. RICHARD L. SUTTON, Kansas City, Mo.: This is undoubtedly one of the most important matters that has ever been brought before our organization, and we are deeply indebted to these distinguished essayists for emphasizing the important points and for clarifying our ideas on the subject. Unfortunately, the questions involved are complicated ones, and personally, I must confess to the feeling that in my mind the atmosphere is still a bit murky.

Fordyce, in his studies on infectious eczematoid dermatitis (1911), was, I believe, one of the first in this country to call attention to bacterial infection as a cause of anaphylaxis. In 1914, I reported a series of cases of allergic dermatitis due to ragweed.

As Dr. Klauder has intimated, we are still far from a solution of the problems.

Dr. W. W. Duke, of Kansas City, has done much work along this line, and much of what little knowledge I possess on the subject, I owe to him. Unfortunately, some of the things that I have learned, I afterward found had to be unlearned, but it is only by recognition of our mistakes that we progress.

For a long time, Dr. Duke felt positive regarding the specificity of his cutaneous tests, but later we discovered, as Dr. Klauder has said, that a reaction to one substance might mean hypersensitivity to an entire and large group.

Recently, Duke has directed his attention to "physical" allergy, such as results from the action of heat and of cold. A few weeks ago, he asked me to see a patient who was so sensitive to cold that the application of an icebag to one of her toes quickly resulted in a generalized urticarial outbreak! Heat sensitization is comparatively common.

DR. WALTER J. HIGHMAN, New York: Although perhaps not apropos to what Dr. Bloch and Dr. Klauder have discussed, for Dr. Sutton's information, I should like to mention that the first time this topic was taken up by this body was in 1915, at the New York meeting, and the second time in 1920 at the Asheville meeting. I believe the views presented on those occasions were as vague and tentative as those advanced by the speakers today. Dr. Sutton expressed himself as feeling confused tonight, and in a murky atmosphere. The rest of us have preceded him in this respect by from eight to thirteen years. I remember when Dr. Towle read his paper, Dr. Pusey said in that simple direct way that is so characteristic of him that he could not see much difference between anaphylaxis and idiosyncrasy. Being young and foolish, I tried to persuade him that there was a

difference, but I failed. Now, I am inclined to aline myself with Dr. Pusey. I think that persons who have allergic diseases have a peculiar reaction, a reaction which is only potentially pathogenic. In that sense the disease, whether due to trauma, to congenital anomalies and kindred things is in the purest sense of the work explicable as due to anaphylaxis. The following factors seem to me to be necessary: First, a peculiarity in the tissue that becomes diseased. Second, the precipitating cause, and finally, that group of X quantities which may be explained as anaphylaxis or any similar concept. When that is said, and in spite of the fact that we have more detailed information than we had thirteen years ago on the subject, we have said all that can be said in reference to these hypotheses in connection with disease, and for the moment are dealing only with diseases of the skin. I do not see that since the days of Richet we have advanced perceptibly in our idea of anaphylaxis in relation to skin disease. I think it is a pity that we have allowed confusion to creep in. According to any one's definition all of the technical terms might be discontinued. I do not see that there can be any doubt that the pathogenic mechanism of eczema and urticaria, and whatever simulates them may have little essential difference. Eczema is the subject that has engaged me particularly, and I feel in complete sympathy with the practical aspects of the work done by Professor Bloch in Zurich. It seems to me that as a groundwork to build up our study his investigation offers the proper method. Whether the group of diseases that is included in the term anaphylaxis will ultimately prove to be explicable or not is immaterial. Certainly Bloch has pointed out a group of phenomena in connection with eczema that clearly defined it in my mind as a group of diseases that occur in persons who are peculiarly predisposed to certain agents. If this only is understood I think the meeting tonight will not have been held in vain.

Dr. William Allen Pusey, Chicago: Dr. Highman and these gentlemen in pulling me into this discussion have pulled me much beyond by depth, but I am willing to express my notions on the subject and speak generally, as some of the discussants already have.

Certainly Dr. Bloch has given us a very closely reasoned paper, and as Dr. Ormsby said, one must study his paper carefully in order to follow his course of reasoning.

I do not agree that the subject is altogether nebulous. I am obliged to Dr. Highman for calling my attention to my remarks concerning allergy and idiosyncrasy. If I said it I am glad to stand by it. I am glad to have Dr. Bloch demonstrate to us his idea regarding primrose dermatitis, that the person who is idiosyncratic to primrose is simply in a condition that he can produce experimentally. By constant application of his primrose irritation to persons otherwise free from idiosyncrasy to primrose they were made idiosyncratic. If this condition is called, in a person who is not idiosyncratic, allergy, then Dr. Bloch has demonstrated that idiosyncrasy and allergy are the same things. That is important in classifying our conceptions. It does not seem to me that the situation is so altogether nebulous and incapable of understanding as some of us have said in a semijocular way. To my mind the process is similar to the production of immunity. Take, for example, a patient who is given horse serum with antitoxin for the prevention of diphtheria. What happens to that subject? He has this foreign protein introduced into his body. His defensive mechanism, his antibody production, if you please, is stimulated by this experience and made very much more effective than before. He does not have accumulated in him a supply of antibodies that will protect him against diphtheria for a long time. What really happens is the stimulation of a normal function of the tissues of his body.

His capacity to produce antibodies against this foreign body is stimulated to a new capacity. If, in about two weeks more, he has another injection of horse serum, he shows a definite serum reaction. What has happened? He has acquired by exercise a capacity to produce this sort of antibodies beyond his capacity to take care of them himself. He poisons himself. He is in a condition of allergy. It seems to me that in Dr. Bloch's experiments he has done the same thing. By touching once with primrose he produces a defensive reaction. If he does this time and time again, he establishes an excessive defense reaction. It is a normal tissue function carried to excess.

PROFESSOR BLOCH, Zurich: I will limit myself to only a few remarks. I hope that some of the questions which were asked at this time, and some of the questions which are surely in your minds but which were not asked this evening, will be answered when you can read my entire paper. On account of the limited time I could read only an extract of my paper and, therefore, necessarily not all was clear.

Furthermore, I must agree with some of the discussants that the whole subject is extremely difficult, and of course one cannot understand these things in listening to a short paper. I have worked on the subject for ten years or more, and I have nevertheless much difficulty in understanding all that has been published in this field. Perhaps the greatest difficulty lies in the definition of words such as allergy, idiosyncrasy and so on, for in this there is great dissension. The serologists and immunologists themselves do not agree about the significance and the definition of these words. Perhaps the two most eminent workers and authorities in this field are Coca in this country and Doerr in Europe. If one reads the publications of these men, one will see that their definitions and conceptions are different from each other. As most allergic diseases are skin diseases, and as the biologic mechanism of allergy can best be studied by skin reactions, it lies with dermatologists rather than with other research workers, particularly rather than with laboratory workers, to define terms and make experiments. There is, however, no doubt that we have here done too little. We have waited until the man in the laboratory, who makes experiments only on guinea-pigs whose skin is so different from human skin, has blazed the trail. In view of this, it is no wonder that there is such confusion.

When I took up this subject it was not only because it is so important for many skin diseases, but also because I was convinced that here the dermatologists can solve problems of great general biologic importance which must remain insoluble for the internists and the theoretical men.

The dermatoses which belong in this category, for instance, urticaria, eczema, toxicoderma, prurigo, and so on, are frequently of great importance and clinically different from one another. It must be admitted that until a few years ago we did not know with certainty much about the etiology and pathogenesis of these diseases. I think when we can prove that their pathogenesis is based on a fundamental common principle, the reaction between antigens and antibodies which are fixed to the cells, this will mean a great step forward. When I think of the former conjectures concerning the metabolic origin of eczema and the mean results of all investigation in this direction, I must say that the progress resulting from the new allergic point of view of the eczema lies precisely in the fact that it is not nebulous but based on scientific observations and has led to discoveries of practical and theoretical importance. As I have tried to show and wish to emphasize again, the proof of the allergic mechanism has been brought conclusively, at least in the case of some of the aforementioned skin eruptions. As proof of this, I shall here give only one example of a case which was actually observed in my clinic:

One of my assistants is hypersensitive to both camomile and celery. When he drinks a cup of camomile tea or eats soup with celery in it, he shows a definite reaction, not only of urticaria and fever, but mucous membrane (asthmoid) and general symptoms. If one takes the blood of this patient, or the serum, and injects it by the method of Prausnitz-Küstner into the skin of a normal person and some time later applies a small drop of extract of camomile or celery on the preinjected site, there immediately appears a strong urticarial reaction. Nobody can deny that this fact proves something. Such demonstrations have been made not once, but hundreds of times, and they are of great importance.

I think it is the task of dermatologists to seek to discover by research which cases and which skin diseases are based on this mechanism. Therein lies the real progress. Of course, it takes much more time, and it is much more difficult to experiment than to criticize. Naturally there are many things which are not yet explained. It is only the beginning of a new period in dermatology, and I think we can here await great progress.

One speaks of the failure of skin tests in eczema. I think that the standard ordinary protein skin tests as they are made in this country do not teach us much about the pathogenesis of eczema. I do not believe that foods are an important and frequent cause of eczema, at least in adults, and furthermore, the positive reactions obtained by the usual scratch method (passing urticarial reaction) in eczematous persons do not prove that the eczema is caused by the test substance employed; for such a reaction cannot be identified with the eczematous reaction. A substance can be considered as the cause of a certain given eczema only if it produces a (clinically and histologically) typical eczematous reaction when applied to the skin of the patient either directly or hematogenously. In my clinic we have made such skin tests for many years on a great number of eczematous and normal persons. We choose as tests a series of organic and inorganic substances which are frequent causes of eczema (mercury, primrose, formaldehyde, turpentine, etc.) as well as substances which we may suspect as causes from a study of the exact history and occupation of each patient. Only if an eczematous reaction develops after twenty-four hours or more do we consider the reaction as positive.

By this method we obtain results which are not only of theoretical but of practical importance. I mention only a few cases which occur to me as illustrations: A man suffered from a chronic recurring eczema of both feet during two years, the cause of which could not be found. Finally we took a piece of his sandal leather and put it on his arm, and after twenty-four hours he developed an eczematous reaction there. Then we were clear on the etiology. He had to discontinue wearing that particular pair of sandals on doing which he was completely cured. In a similar case it was not the leather but the blacking which was to blame. Another patient who worked in a mill had some serious attacks of a diffuse eczema at intervals of several years. The tests which were made with all sorts of substances with which he came in contact in his occupation showed that his skin was hypersensitive to oats. A close investigation of his history disclosed the fact that the attacks always occurred subsequent to his contact with this cereal, which took place only when he replaced another employee of the mill during his vacation. In this case we were able to desensitize the patient by injection of oatmeal extracts.

I myself am a good example. I had never had an attack of eczema in my life, and none of my family ever had one. So far as I know I have not a pathologic metabolism which could be regarded as a cause of eczema, but I could produce in myself an idiosyncrasy to primrose, which results in a serious eczema on any contact with this plant. Since I have known this I have carefully avoided touching

them, but sometimes I am not aware of their presence. One night I awoke with a serious attack of eczema of the face and hands, and I was frightened because I thought I had become unspecifically sensitized. It was only after several days that I found out that my assistants had pulverized some dried leaves of primrose in a room through which I had passed only once. When I arrived in this country I had an attack of eczema of the head, hands and legs which lasted nearly a week, and if I had not known that I was specifically sensitized to primrose I might have thought it was due to the American food. But it was not the food, for some people had been kind enough to send us flowers when we arrived, and among them were primroses. They had been in my room only a few hours, but this sufficed to give me an acute attack of eczema.

As far as desensitization is concerned, the problem is not solved. Great difficulties are met in all allergic diseases and especially in eczema. The reasons for this are not yet clear, but are perhaps caused by the fact that the antibodies are fixed to the cells and, therefore, no efficacious antiserum can be prepared. On account of this, the importance of tests we described lies chiefly in the possibility of discovering through them the etiologic factor and enabling its removal.

In answer to Dr. Alexander's question about the cause of the different localizations of the allergic reactions, I should like to make only this remark. The question of localization is one of the most important and difficult ones in pathology. In the allergic diseases, however, of which we here treat, the problem is rather clearer than elsewhere. Here the localization is dependent on the presence and situation of the specific cellular fixed antibodies. In guinea-pigs, for instance, the special form of the anaphylactic shock is due to the fixation of the antibodies to the bronchi and certain smooth muscles; in the dog, it is the liver which contains the antibodies and, therefore, receives the shock. Conditions in human beings are similar, only the individual differences are much greater.

Some have their antibodies in the bronchi, some in the vascular tissue of the skin, and others in the epidermis, and the same antigen produces in the first person an asthma, in the second person urticaria or erythema, and in the third person an eczema. We must suppose that the boy I showed you had antibodies at the same time in the bronchi and in the epidermis and he, therefore, developed a generalized eczema and an asthma after one injection of quinine. The antibodies must be different in quantity in different regions of the skin, and that explains the localization of the same disease (e. g., of eczema) in different parts of the same organ. For instance, we often find that parts of the skin which have had eczema and been cured react differently (stronger or weaker) from the rest of the skin. If one experimentally produces in a man a trichophytosis which makes an allergic modification of the skin, then one has always the highest degree of allergy in the neighborhood of the primary infection of the trichophytosis, and in the regions which are distant from the primary focus the allergy becomes weaker and weaker. There is no other theory which explains these facts.

Regarding the question of eruptions from the use of drugs, it has been definitely proved I think, especially by Biberstein of Breslau, that many can have an allergic mechanism. In some cases of arsphenamine idiosyncrasy there is a marked reaction not only to arsphenamine itself, but also to other compounds of arsenic. This idiosyncrasy can be transmitted to normal persons. I myself have had negative results in the transference of eruptions from the use of drugs, but my experiments are not numerous. The question remains open, and I would not claim now that all eruptions from the use of drugs are due to the allergic mechanism. The question can be solved only by repeated experiments. Theoretically it is even of the greatest importance if we can show that such a mechanism can play a rôle

in certain diseases of the skin. The same is true of urticaria. There are cases that do not correspond to this mechanism, for instance the urticaria produced by psychic emotions, that produced by cold water, and so on. Those cases must have another mechanism, possibly of purely nervous origin, but that is another problem and I cannot discuss it now.

DR. WILLIAM ALLEN PUSEY, Chicago: Professor Bloch has given us a clear and careful description of a certain type of skin condition in which the endocrines are involved. It is interesting for that reason, but my own especial reason for interest in the paper is that a man of Professor Bloch's strongly scientific habit, with his immersion in scientific research, should think it worth while to give us these case reports. I do not know how it is on the Continent, but over here most men make clinical reports with apologies. To most of us who think that most of dermatology is the study of diseases of the skin, it is a great pleasure to have a man of Professor Bloch's position give us this thoughtful paper based on case studies. As he said last night, no one man can cover all the facts of allergy in skin diseases. It is only by the combined experiences of many men that we can finally make our pictures complete. It is the same way in clinical dermatology, notably in endocrine observations; we can obtain complete data only by the combined observations of many men extending over a long time. I wish to express my agreeable reaction to Dr. Bloch's giving us this sort of paper.

CUTANEOUS NEUROMA

REPORT OF AN UNUSUAL CASE SIMULATING KELOID *

WERNER W. DUEMLING, M.D.
Instructor in Dermatology and Syphilology, University of Michigan Medical School
ANN ARBOR, MICH.

Duhring,[1] in 1873, reported a condition, neuroma of the skin, which up to that time had not been described. His patient was a man, aged 70, in whom the lesion, which was attended with itching, had appeared on the shoulder ten years previously. The lesion developed slowly and was characterized by flattened nodules, which occupied the left scapular region, shoulder and outer surface of the arm, as far down as the elbow. It was a pink to purplish-pink lesion, and, as it progressed, paroxysmal pain constituted a distressing feature, for which exsection of a portion of the brachial plexus was performed, with only temporary relief. Microscopic examination of the tissue revealed that the growth was made up of a firm connective tissue containing nonmedullated nerve fibers. More complete studies of this case were carried on by Dr. de Schweinitz,[2] in the laboratory of Dr. Henry F. Formad, when the case came to autopsy eight years later. The earlier diagnosis together with the microscopic observations of neuroma were substantiated.

In 1874, Kosinski [3] described a similar case in a man, aged 30, in whom the lesion had appeared fourteen years previously over the posterior and outer sides of the right thigh, as far down as the lower third, and over a portion of the buttocks. It too was characterized by intense pain, and the microscopic observations of a nonmedullated neuroma were identical with those of Duhring.

Since Duhring's first careful account of neuroma of the skin and the subsequent case of Kosinski, the literature has contained only two other cases of neuromas which involved the skin.

Darnall's [4] cases cannot be properly classed in this group, since the tumors were all freely movable under the skin and were distributed along the course of the nerves which supplied the various parts.

---

* Submitted for publication, June 30, 1928.

* Studies and contributions of the Department of Dermatology and Syphilology of the University of Michigan Medical School; service of Dr. Udo J. Wile.

1. Duhring: Painful Neuroma of the Skin, Am. J. M. Sc. **66**:413, 1873.

2. De Schweinitz: Am. J. M. Sc. **82**:435, 1881.

3. Kosinski: Centralbl. f. Chir., 1874, no. 16.

4. Darnall, W. G.: Multiple Neuromata of the Skin, J. A. M. A. **47**:1810 (Dec. 1) 1906.

Heidingsfeld,[5] in 1913, reported a case, the clinical description and symptoms of which were almost identical with those in a case of myoma cutis which he had reported some time previously. The similarity to myoma cutis was so striking that this diagnosis was made before the microscopic report was returned. The lesion which occurred in a man, aged 50, had been present for twenty-five years; it was situated on the anterior aspect of the right thigh and appeared following a slight injury. It was a small, purplish-red nodule, somewhat larger than a split pea, and was troublesome because it soon became the seat of severe paroxysmal pain, of both a spontaneous and an induced character. Pressure and slight irritation from the trouser leg was almost unendurable, and the pain radiated up and down the thigh toward the genitocrural region and the knee. The entire growth was excised, and microscopic examination revealed it to consist of an irregularly round mass of deeply staining tissue, irregularly convoluted and containing numerous spaces which were easily recognized as being vascular. The mass rested in the true skin, and the overlying papillae were entirely obliterated. Specialized elements were not discernible in the tumor mass, except in the specially stained preparations which showed an abundant meshwork of richly distributed nonmedullated nerve fibers, which ramified through the tumor mass in an arborescent manner. Hair, hair follicles and sweat or sebaceous glands or ducts were not demonstrable in the cutis or the epidermis. The pathologic diagnosis was that of a neuro-endothelioma of amyelinic type, which conformed closely in its histologic character to an amyelinic neuroma.

The last case reported is that by Little[6] in 1918, and concerns a South African soldier, aged 30. The eruption dated back two years, and the patient had some hundreds of split pea-sized, bluish-red, hard cutaneous nodules, which were extremely tender to the touch. The condition involved only the legs. The section showed that the bulk of the tumors were made up of nerve fibers, so that the diagnosis of neuroma was made notwithstanding the extreme rarity of this condition.

On account of the paucity of cases in the literature, and because the case seen in this clinic presents some unusual features, it was deemed worthy to add a detailed description of this case to the existing literature.

REPORT OF CASE

CASE.—M. D., a Belgian woman, a housewife, aged 40, entered the dermatologic service of the University Hospital, complaining of an eruption over the left breast. The past, marital and family history was essentially negative. She said that the lesion on the breast was first called to her attention by a slight itching and "deep sticking sensation" three months before examination. Her physician had pre-

5. Heidingsfeld, M. L.: Neuroma Cutis, J. A. M. A. **61**:405 (Aug. 9) 1913.

6. Little, E. G.: Proc. Roy. Soc. Med. **12**:35, 1918-1919.

scribed an ointment for local application. Since that time, the area had become much reddened, and the itching had increased. Sharp spasmodic pain was also referred to the back. Since its onset, the lesion had rapidly increased in size until it covered the entire breast area.

Examination.—Examination revealed a lesion which was localized to the region of the left breast and to the region just about this. It partially encircled the areola of the breast, but did not involve either the areola or the nipple itself. It

Fig. 1.—Lesion, as it appeared when first seen.

consisted of a large palm-sized plaque, which was roughly crescentic in outline, and was sharply marginated. It was slightly elevated above the surrounding normal skin, was bluish red, and had a rather fibrous feel. The only indication of pruritus was that the patient scratched her breast occasionally during the examination. In the border of the lesion, a slight telangiectasia was present, and there was a suggestion of scar formation at the upper pole.

The results of the remainder of the physical examination were entirely negative, and the routine laboratory tests were also negative. A tentative diagnosis of spontaneous keloid was made, and at the February meeting of the Chicago

Dermatological Society, at which the case was presented, this impression was universally confirmed. On account of the rapidity of growth and its scirrhous quality, the diagnosis of "cancer en cuirasse" was also entertained.

The possibility of an unusual tumor related to nerve fibers was not thought of until microscopic studies had been made. Biopsies were made from three parts of the lesion at extreme distances from each other.

Microscopic Examination.—The epidermis was almost normal in thickness, but showed nearly complete obliteration of the rete pegs caused by pressure from the

Fig. 2.—Low power magnification, showing the entire section.

tumor below. The upper layers of the corium showed the structure of a loose fibroma, in some places almost that of a myxofibroma. A marked hyaline change was seen in the deeper portion of the tumor, which became denser and more distinctly fibrous as one approached the deeper layers of the cutis (figure 2). Blood vessels could be seen traversing the entire tumor mass, and they did not seem to be compressed. Traces, however, of hair follicles, sweat or sebaceous glands could not be seen. The deepest portion of the cutis (figure 3), occupying about one third of the thickness of the true skin and extending down to the subcutaneous fat, was made up of nerve bundles, cut in transverse and longitudinal section, and surrounded by loose fibrous tissue resembling that in the upper layers

of the corium. In all the sections (figure 4), the nerve tissue could be readily recognized by the spaces left by the solution of the myelin sheaths in the process of fixation. It was seen cut in cross, tangential, longitudinal and oblique section, which indicates its plexiform nature.

Stained by van Gieson's method, the nerve tissue took the characteristic yellow color in contrast to the red of connective tissue.

ETIOLOGY AND PATHOLOGY

Virchow [7] first cleared up the confused status concerning the neuromas. He classified them according to false neuromas, or those arising from neurilemma, and true neuromas, or those arising from nerve tissue

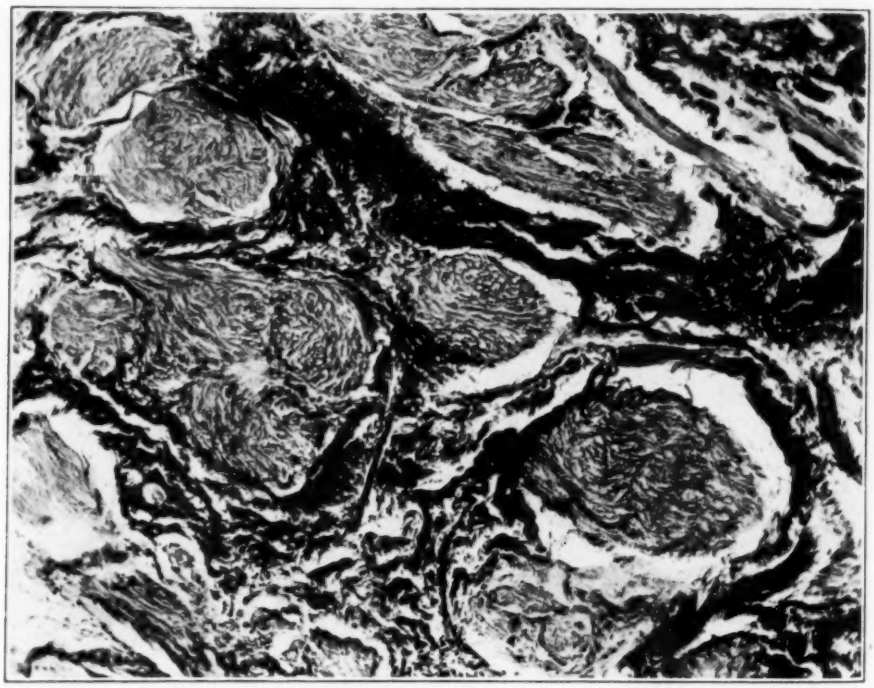

Fig. 3.—High power magnification, showing the nerve bundles cut in transverse and longitudinal section, and surrounded by a loose fibrous tissue.

itself. The latter he subdivided into three types: neuroma gangliocellulare, containing newly formed nerve cells; neuroma fibrillare amyelinicum, made up of nonmedullated nerve fibers, and neuroma fibrillare myelinicum, composed of medullated nerve fibers. Of the two subdivisions of the latter type, the myelinic variety is more common and better understood, though both are extremely rare tumors. The growth is benign, consisting of medullated nerve fibers, intricately curved, intertwined and plexiform, as a general rule, and associated

7. Virchow: Die Krankhaften Geschwülste **2**:150, 1864.

with some fibrous tissue. It is significant that since von Recklinghausen's monograph, the literature contains many descriptions of fibromas of the nerves, but almost none of neuromas.

The diagnosis can be confirmed by special stains, but in the case of the amyelinic variety, this is often extraordinarily difficult, since the tumor so closely resembles a fibroma. Its fibrils stain less intensely with eosin than connective tissue, and show on cross-section like small disks; cut in a longitudinal direction, they appear in bundles, and may be mistaken for smooth muscle.

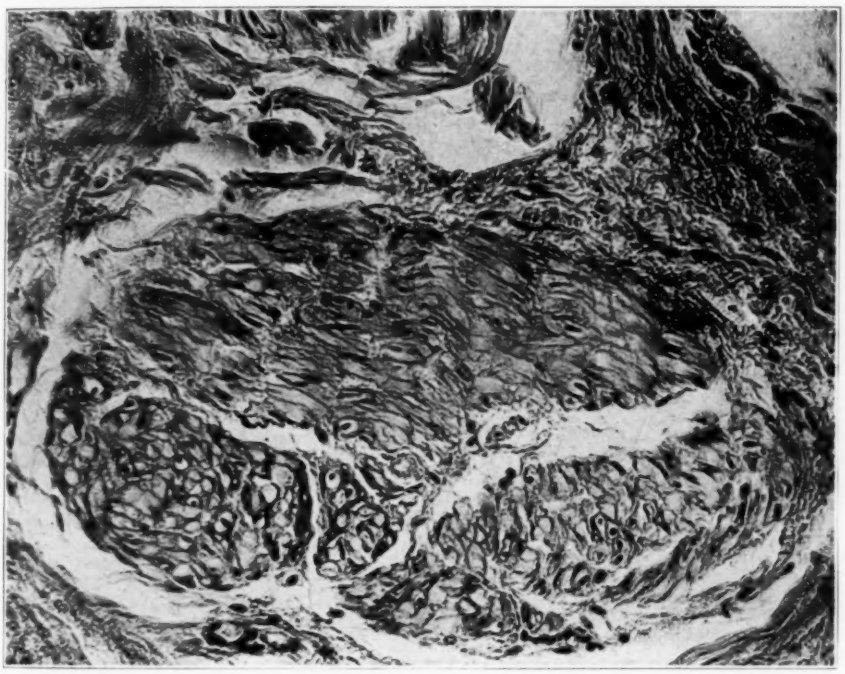

Fig. 4.—A still higher power magnification, showing the spaces left by the solution of the myelin sheaths in the process of fixation. The nerve fibers are cut in both cross and longitudinal section.

In the skin, neuromas are found in the corium and extending into the deeper structures. On histologic examination, they are seen to be made up of firm connective tissue, containing medullated or nonmedullated nerve fibers, running up as high as the papillary layer of the corium. Blood vessels and lymphoid cells are also described as present in the tumors, and these were present in the case presented. The tumors are neuromas, and differ only in the associated pathologic tissue. This tissue may be fibromatous, myomatous, endotheliomatous or lymphangiomatous.

It is the consensus of opinion that trauma or irritation in one form or another is the exciting factor, and that microscopic examination is necessary to determine the exact nature of the growth, as it bears a close clinical resemblance to myoma, and in the present case, to keloid.

CONCLUSIONS

1. Herein is reported an unusual, rapidly forming tumor of the skin, closely resembling, clinically, an enormous keloid.

2. Histologic examination showed that the tumor was made up of connective tissue bundles, which surrounded bundles of medullated nerve fibers.

3. The microscopic characteristics of the tumor in this case, and, except for its unusual size, its clinical characteristics, permit its classification under true neuromas of the skin.

PARONYCHIA

AN ATTEMPT TO PROVE THE ETIOLOGIC FACTOR IN AN EPIDEMIC AMONG ORANGE WORKERS *

H. SUTHERLAND-CAMPBELL, M.D.
LOS ANGELES

On Sept. 17, 1927, two patients presented themselves for examination, complaining of pus under the finger-nails. In one, the condition had obtained for two months; in the other, it had been present for twelve months. Both said that the symptoms had begun a few weeks after they had commenced their work, which consisted of squeezing oranges by hand in order to obtain commercial orange juice, and that several of the other youths similarly engaged were also infected.

The history was as interesting as it was significant. The subject was discussed shortly afterward with the manager of the concern, who admitted that many of the youths so employed were similarly infected, but in varying degree. Only the worst cases had come under observation; three other subjects presented themselves subsequently.

As the cases differed clinically only in degree of severity, I will submit a description of one as typical of several.

REPORT OF CASE

History.—R. Z. M., a white man, aged 20, complained of pus under the finger-nails of approximately twelve months' duration. Itching was present only at times. The fingers were not painful, except when pressure was applied. The patient said that he had contracted the infection from his work, and as proof of this, he cited the fact that his hands had been well before he commenced the work, that about three weeks after starting the work he had begun to have trouble with his hands, and that practically all the other men employed at the same occupation, that is, squeezing cull oranges by hand for the commercial trade, were similarly infected. He also added that the newcomers anticipated the infection and took prophylactic measures, using various antiseptic ointments and solutions, in spite of which the infection ultimately obtained.

The patient gave the history of having been well all his life. He appeared well nourished, and was approximately of the age stated. He was apparently in good general health.

Physical Examination.—The results of the physical examination were negative in all respects, with the exception of the finger-nails of both hands. These had shallow punctate erosions in their entire lengths, being most marked in the proximal ends. The thumb and ring fingers of the right hand demonstrated a paronychia. The thumb nail of the left hand was similarly affected. In the

* Submitted for publication, July 3, 1928.

* Read before the Section on Dermatology and Syphilology at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 15, 1928.

affected nails, the free borders showed a degree of yellowish discoloration, and were somewhat friable. They did not demonstrate any thickening. The cuticle and the skin proximal to it were slightly swollen, red and somewhat tender. On retraction of the cuticle and application of pressure, occasionally small beads of pus could be obtained. The surface of the skin adjoining all the infected nails had not shown any degree of involvement, and merely demonstrated the underlying inflammatory reaction by a slight degree of redness; this remained so throughout the term of infection, which had obtained in this case for approximately one year. Extension into the adjoining surfaces of the skin was not apparent. The same may be said of all the surfaces of the skin surrounding the infected nails examined in these cases. A nail removed surgically in one case was followed by an apparent continuation of the infection in the new nail.

Fig. 1.—Finger-nails of an infected orange worker.

Experimental Observations.—Scrapings and sections were not secured at the first visit, as the nails were heavily medicated. After a lapse of five days, scrapings were taken from the nails, and these were boiled in a 15 per cent solution of potassium hydroxide. Negative results were obtained in six slides. In the seventh, after careful search, atypical and doubtful mycelial fragments were discovered in one small area of the field, and what might possibly be a few shrunken yeastlike bodies. When another slide was prepared in potassium hydroxide, the preparation was allowed to soak for four hours without boiling, pressure was applied, and on examination of this slide a number of yeastlike bodies were noted. Cultures were made from the nails. They gave a growth in all tubes within from twenty-four to thirty-six hours, both fungoid and bacterial. Repeated cultures were made with widely varying results, but apparently a uniform growth was not present.

At this point, it was decided that some of the growths might be saprophytic and attached to the surface of the nail. Segments of the nails, therefore, were taken, cleansed with green soap and water and rinsed; following this, they were washed in 75 per cent alcohol and rinsed. They were then planted, and in approximately forty-eight hours growths appeared from three of the five cases presented. These three growths were similar. (In one of the cases, a rounded, hard, white, flat fungoid growth was also present.) Later plantings of the dirt obtained from below the finger-nails gave a number of dissimilar fungoid growths on agar, in all cases. The work done in attempting to isolate a growth from the cull orange skins, similar to the one that was most constant in the nails, was as tedious as it was uninteresting, and devoid of results. One may state, however, that a number of molds are present on the skin of the cull oranges.

The rounded, white fungoid entity, already mentioned, repeated itself only twice in the later series of implantations from the nails of these patients. That which was most constant manifested itself as a fluffy, grayish-white growth, which ramified out over the agar in a wide, diffuse manner. As the growth continued,

Fig. 2.—Nails of the thumbs of an infected orange worker.

the color deepened gradually, becoming a grayish brown, and on the surface of the agar, brownish granules appeared above a light, translucent, tenacious scum.

On petri dishes, it was noted that the growth flourished at a rapid rate until it had literally filled the dish with its aerial hyphae, when it manifested a definite cessation of growth accompanied by a gradual shrinking.

Attempts were made with material taken from primary cultures on Sabouraud's dextrose agar to inoculate the nails of a guinea-pig, with negative results. Intraperitoneal injection of the guinea-pig seemed to afford it some slight degree of distress for three days, which was followed by apparent recovery. About nine days later, a nodule developed at the site of injection, and the animal seemed distressed. It was killed, and examination did not reveal any abnormalities with the exception of the nodule on the abdomen and a nodule in the anterior border of the liver, which was adherent to the diaphragm and to the abdominal wall.

Pathologic Report.—Section from a Subacutaneous Nodule: The nodule was about 3 mm. in diameter and was located just above the muscle layer. The peritoneum was not included. It was circumscribed and was surrounded by a thick layer of loose, newly formed fibrous tissue, within the inner zone of which

were numerous large giant cells of the Langhans type, and indefinite granulomatous nodules. In the center there were numerous polymorphonuclear leukocytes and a few scattered giant cells, a few strands of fibrin and degenerated cells. Scattered among these were numerous spheroidal bodies, averaging from 16 to 18 microns in diameter. They had a double-contoured, thin membrane and clear centers. None showed any sporulation or budding, and none were included in the giant cells. These bodies apparently belonged to some of the yeast family.

Section from the Liver: The nodule was about 2 mm. in diameter and was apparently located within the capsule and not in the parenchyma of the liver. Along its external edge, there was a thick layer of fibrous tissue, apparently an adhesion to some other structure. The surrounding fibrous tissue was loose and cellular, and presented a granulomatous reaction. The center was composed of numerous leukocytes, degenerating cells and plasma cells, and a few strands of fibrin. Included in these were a few clumps of large cocci, but spheroidal yeast-like bodies were not found.

Nodules were not found in the spleen.

Fig. 3.—While the destruction of the pulp is most marked in the segment affected, it should be noted that beyond a degree of discoloration common to any cut and exposed surface, the epidermis is normal in appearance. It was found that the infection was limited to the pulp, and that the cells were entirely disorganized and were practically filled with the so-called yeast bodies. Sections demonstrated that neither mycelia nor yeastlike bodies penetrated into the skin of the cull oranges.

EXPERIMENTAL WORK

The ears of a rabbit were inoculated, without results after the first two inoculations; the right ear was the seat of inoculation, the left ear being used for scarification control. At the time of writing, the third inoculation demonstrated a spreading patch of dermatitis, scrapings from which failed to reveal any yeast bodies.

I next attempted to inoculate oranges with the organism by light surface scarification of the skin, and believed that I had succeeded in

several cases, but the rapidity with which the oranges were destroyed made me somewhat doubtful as to the authenticity of the growth. On examination, a totally different organism was found ramifying into the orange, and this was proved to be *Penicillium italicum,* or the common blue mold. All further attempts to inoculate the skins of the culls met with failure. The regularity with which the scarified oranges developed the infection of the blue mold led me to believe that my technic was somewhat faulty, and I asked Dr. O. A. Plunkett,[1] of Los Angeles, of the University of California, if he would undertake the further inoculations. He did so and made several inoculations under sterile conditions, with many negative results. Finally, however, by puncturing and

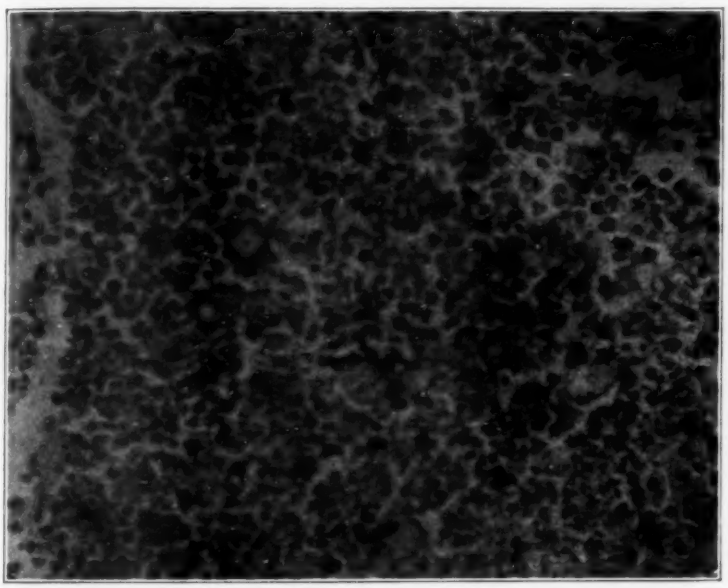

Fig. 4.—Cross-section of the nodule produced in the abdominal wall of a guinea-pig.

inoculating directly through the skin to the pulp, he obtained growths in a series of oranges. It was necessary to section the orange, however, before one was aware of any growth, as the surface of the orange and the area directly surrounding the puncture wound remained apparently normal.

Some cuttings were taken from the nails of normal human beings, and were boiled for ten minutes in a test tube; about fifteen of these so-called yeast bodies were counted out and were washed from the counting slide into the test tube with sterile water.

1. Plunkett, O. A.: Personal communication to the author.

After about three weeks, a fine, white, nebulous growth was noticed above the surface of the nails. When some growths were removed for examination, they were found to be somewhat tenacious and had to be teased away from the surface of the nails. On microscopic examination, the growth presented a field composed mainly of mycelial elements. These were accompanied by a number of yeastlike organisms, which in the main varied widely in relative size to the organisms introduced,

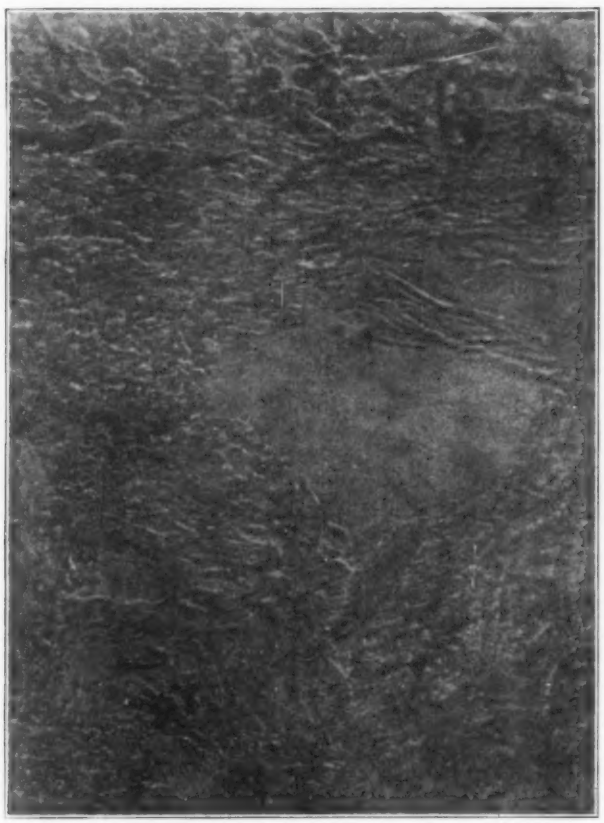

Fig. 5.—Yeastlike body in the substance of the nail from the original case.

being fully as large as the forms found in the orange, which in their turn, were larger than those found in man.

In order to ascertain whether the nails were invaded by these organisms, several pieces of the nails were scrubbed thoroughly for five minutes in green soap and water; they were then washed in alcohol, dried and soaked in potassium hydroxide, and a few of the yeastlike organisms were found within the substance proper of the nail. Mycelial fragments were not present.

REVIEW OF LITERATURE

A consideration of the literature revealed that fruits have been found to be a source of infection to man,[2] and that a number of cases of epidermophytosis have been reported in which both mycelia and yeastlike organisms were present. In most of the latter cases it was presumed that they were mixed infections. In the case of infections from fruits, the invading body was described as a yeastlike organism.

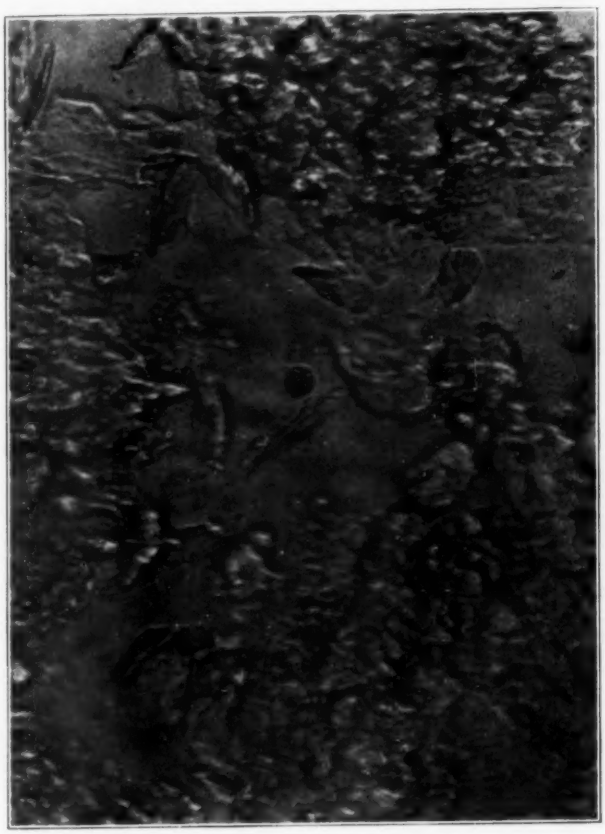

Fig. 6.—Yeastlike body in the substance proper of the nails invaded by water-borne organisms (experimentally).

These observations were similar to mine, the organism in this instance having been pronounced a yeast by both a physician and a pathologist of repute. I decided to prove, if possible, that this was a true yeast infection. It was primarily necessary to determine exactly what con-

2. Kingery, L. B., and Thienes, C. H.: Mycotic Paronychia and Dermatitis, Arch. Dermat & Syph. **2**:186 (Feb.) 1925.

stitutes a yeast. At the outset, it became somewhat apparent that no little difference of opinion exists with regard to the definition and classification.

In a brief consideration of the yeasts, I found that Cagniard-Latour [3] first described them as being composed of cells capable of reproduction by a sort of budding, and suggested that it was possible that their vegetative action had some effect on the transformation of

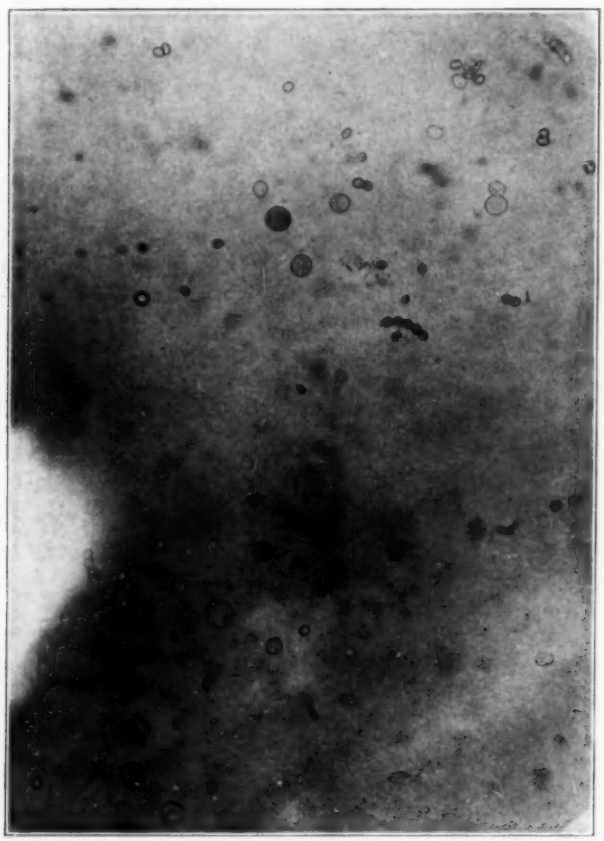

Fig. 7.—Yeastlike organisms from a primary culture on Sabouraud's mediums.

sugar. In 1857, two papers presented by Pasteur, namely, Lactic Acid Fermentation and Alcoholic Fermentation, in which he concluded that the reduction of sugar into alcohol and carbon dioxide by the yeasts was correlative to a phenomenon of life, bore out the views expressed by Cagniard-Latour. These conclusions disproved the theories of Liebig,[4]

3. Cagniard-Latour, cited by Osler, W., in Vallery-Radot, Rene: Life of Pasteur, New York, Doubleday, Page and Company, 1926, p. 7.

4. Liebig, cited by Osler (footnote 3).

which at that time obtained, "that a ferment was an alterable organic substance which exercised a catalytic force, transforming the sugar." In 1867, no little surprise was afforded the medical world by an article by Lister,[5] in which he assumed that "Organic decomposition was due to low forms of life in the air, which was shown by Pasteur to be the essential cause resolving complex organic compounds into substances of simpler chemical constitution, just as the yeast converts sugar into alcohol and carbon dioxide."

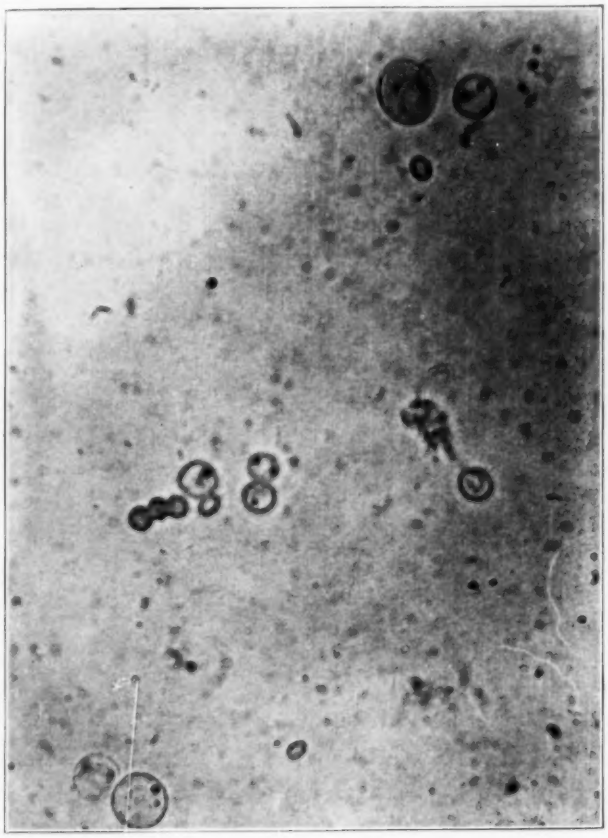

Fig. 8.—Yeastlike bodies from a primary culture on Sabouraud's mediums (under higher magnification).

The analogy between putrefactive change and fermentation must have presented itself to one of the most agile minds of the age as an infinitely more preferable solution to this great medical problem than spontaneous generation, and one learns that Pasteur had fundamentally a strong conviction of the similarity of these processes. The yeasts

5. Lister: Lancet, 1867; cited by Osler, in Vallery-Radot (footnote 3, p. 8).

may therefore, be considered as one of the stepping stones in modern bacteriology. In view of this fact, it seems strange that little more is known of them today.

Some authorities classify them with the fungi imperfecti; others separate them into the true and the false, the true yeast being an organism that, under certain conditions, reproduces vegetatively by budding and forms endospores or ascospores. The false yeasts do not form

Fig. 9.—Field showing phases of amytotic division; round yeast cell, dumbbell shape and two separate entities.

ascospores. Others apparently do not agree with this and state that a yeast may contain asca. Buchanan [6] was responsible for the following:

> Organisms resembling yeasts are known to produce disease in men and animals. Their exact botanical position is uncertain. There is by no means an agreement as to the methods of differentiation of species among these yeasts. The extreme variability in morphology of the same yeasts under different cultural conditions renders an application of a classification by morphological characters difficult.

6. Buchanan, M. S., and Buchanan, R. E.: Household Bacteriology, New York, The Macmillan Company, 1919, p. 48.

Gougerot,[7] in "Les nouvelle mycoses," stated that "The odiomyces do not demonstrate mycelia nor ferment sugars in early cultures. In older cultures, however, the opposite is true." One may assume, therefore, that their physiologic reactions are also apparently subject to variation.

From the Encyclopedia Brittanica one gleans the following:

Saccharomycetaceae include the well-known yeasts which belong to the family *Saccharomyces*. They are characterized by their unicellular nature, power of

Fig. 10.—Beginning mycelial growth; period of time varies according to environmental influences; in this instance the growth manifestation obtained in sixteen hours.

rapid budding, capacity of fermenting various sugars, and their power of forming endogenous spores. The sporangium and its endogenous spores has been compared to an ascus, and on these grounds the group is placed among the ascomycetes—a very doubtful association.

7. Gougerot: Les nouvelles mycoses.

A great question of theoretical importance has been raised frequently in connection with yeasts. Relative to morphology, are yeasts merely degraded forms of higher fungi as would seem implied by their tendency to form elongated hyphae-like cells in the veils of fermented liquors, and their development of ascospores as well as the wide occurrence of yeastlike sprouting forms in other fungi, namely, mucor?

Park and Williams [8] reported the following:

Yeasts (blastomycetes): These micro-organisms are called blastomycetes because of their frequent and marked method of reproduction by means of budding. Certain varieties are pathogenic to the lower animals, and since 1894, there have been reported a number of cases of human infection from yeasts. The position which the yeasts occupy in systematic biology has not as yet been accurately determined. Forms classed by some authors with the yeasts are placed by others in fungi imperfecti of the molds. All of these forms are placed by some with the fungi imperfecti. The chief differential characteristics between these groups may be tabulated tentatively as follows:

	Genus	Endo-spores	Budding	Mycelium	Gas Formation
Blastomyces..	Saccharomyces	+	+	—	+
Fungi Imperfecti..	Torula	—	+	—	—
	Monilia	—	+	+	+
	Oidia	—	+	+	—
	Coccidiodes	+	—	+	—

The size of the yeast cell varies enormously. From no larger than a cocci 0.5 m. in diameter, to the giant yeast cell of 40 m. or more. Each cell contains a more or less definite nucleus which is demonstrated by the chromogenic stains. A fact of the utmost importance for the propagation of the blastomycetes and the continuation of the specie is the formation of spores, which may take place by the changing of special cells as a whole into single spores, or by the dividing of the nuclear material of the cell into several fragments, each of which becomes the center of a new cell, lying within the original cell. The definite biological relationships of the monilia, oidia, torula, and the yeasts or saccharomycetes, have not been determined. The relations of the coccidial organisms have not been settled. They have but been grouped tentatively, and later it is hoped that further investigation may help us to classify the pathogenic forms aright. We should still call all rapidly budding forms of these organisms "Blastomycetes" and the diseases caused by them "Blastomycoses." It is to be preferred to calling them torula infections, idiomycoses, monilioses, when we are not yet sure that the organisms producing them belong to the torula, oidia, or monilia. We are however, sure that they produce yeast forms and that they propagate by budding.

The consensus of opinion, it would seem, is to the effect that the most satisfactory classification of the yeasts is that of Hansen,[9] who recognized two families and nine genera.

---

8. Park and Williams: Pathogenic Micro-Organisms, Philadelphia, Lea & Febiger, p. 551.

9. Hansen, cited by Buchanan (footnote 6, p. 49).

Out of this seeming chaos loom two facts: (1) Notwithstanding criticism from some sources, one is possessed with a degree of admiration for the person, who, in describing certain infecting agents, confines himself to the simple statement "a yeastlike organism," and (2) the classification of any of the fungi, to be of any intrinsic value, must be undertaken by a mycologist of no mean ability.

It is known that under certain conditions some few of the yeasts form mycelia. They are, however, somewhat meager or scant. In

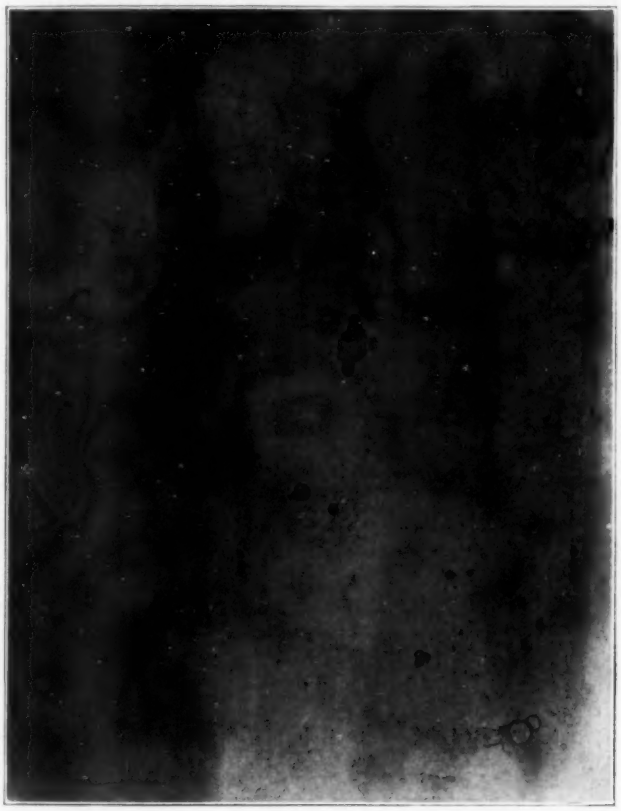

Fig. 11.—Further stage in mycelial growth.

endeavoring to prove that this rounded organism is a yeast, one is forced to commence with this simple premise: A yeast is an organism which at no phase of its life cycle freely forms mycelia. This being granted, I shall endeavor to show that the yeast forms in this case are the spores of a fungus of the family *Mucoraceae* which have adopted this morphology because of adverse environmental conditions.

The orthodox hanging drop was found to be unsuitable for examination of the supposed yeast bodies, for the following reasons: (1) the

varying density of medium; (2) the laws of gravity, and (3) the transillumination varied, and so made photographic records unpractical.

It became necessary to find some other method by which one could examine any propagation that might take place. This was done by means of a glass slide which had a small depression in the center. Some of Sabouraud's agar was heated, and one drop was allowed to settle in the center of the depression. On this was placed a drop of dilute solu-

Fig. 12.—Fully developed nonceptate mycelia.

tion containing yeast. This was bounded by a moat of sterile water. On the glass level outside this was fashioned a wall of sterile petrolatum which supported a cover glass. The fields obtained were photographed, with only fair results. Nevertheless, they are sufficiently clear, I hope, to convey the impressions that I wish to make.

The organism was observed for about five days, roughly at four hour intervals during the night, and practically hourly during the day. Concentration was held on one of the smaller, single-contoured bodies

in the field. I noted first a slight disturbance in the evenness of the distribution of the protoplasm. Next, a change in size was noted. The organism was getting slightly larger, and at this stage the double-contoured membrane was beginning to show. Small vacuoles and granules were also appearing within the cell. Next a dumb-bell type of constriction was observed, and at this stage most of the granular elements within the cell were gathered toward the midplane

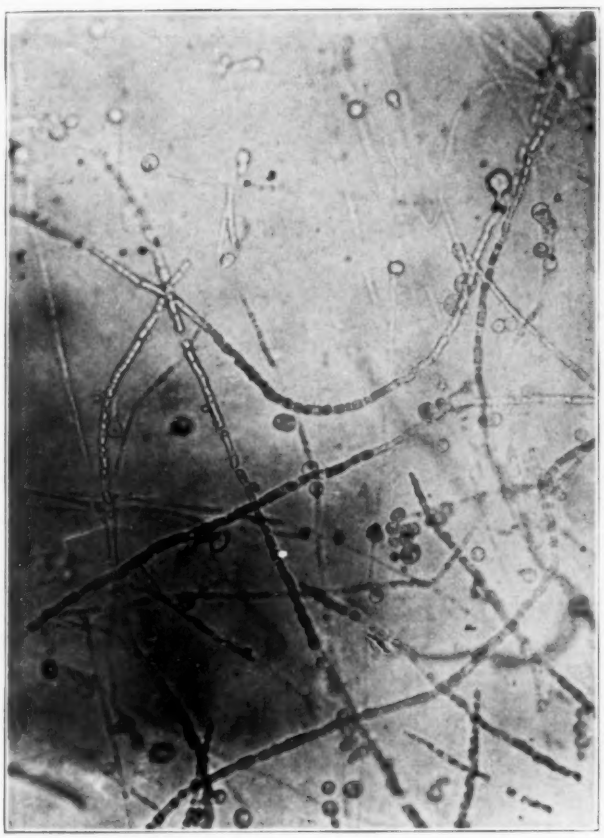

Fig. 13.—Commencing reversion to yeast morphology. The vacuolation with segmentation should be noted.

which was rather suggestive of fragmented nuclear matter, as it is well known that the nucleus always assumes the position of greatest activity within the cell. The dumb-bell constriction went on through the well known cycle of gemmation, budding or amytotic division.

In other cells, gemmation took place by the aggregation of the granules toward one side wall of the cell, and shortly after this a small, bulbous projection appeared at that point of the

cell which gradually became larger and separated itself into a new entity. After approximately sixteen hours, the protoplasmic content of most of the cells became more definitely differentiated into a lighter colored, granular substance, and the vacuoles became more pronounced. In some cases, these cells gradually commenced to elongate toward one pole, almost as a whole. Others threw out smaller sized pseudopodia, and these continued to grow out into definite nonseptate mycelia, which ramified out in all directions to fill the field.

Fig. 14.—A further stage in the reversion to yeast morphology.

When the field was somewhat covered with mycelia, it was decided to subject the organism to unfavorable environmental influences, and to note any morphologic change that might be induced. This was done by taking out the moat water by means of a fine capillary glass tube, through the petrolatum, and introducing less than one drop of 1 : 10,000 mercuric chloride solution.

The phenomena resulting were as interesting as they were spectacular. Again the protoplasmic contents of the mycelia manifested a

differentiation. Granules became deeper colored, and the protoplasmic fluid appeared to coalesce into islands which were fairly evenly distributed along the mycelia. The rounded vacuoles elongated and seemed to push the protoplasmic fluid before them in either direction. Short areas of tubing that contained protoplasm were thus produced, also much longer areas of simple tubular walls, which apparently did not contain anything. There next appeared what one might interpret as septums, bounding the intramycelial surfaces of the protoplasmic seg-

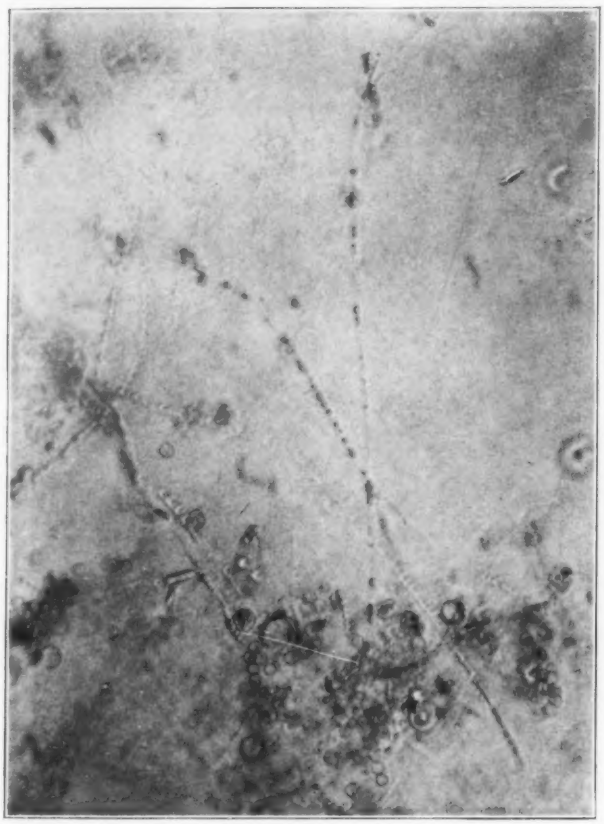

Fig. 15.—Disappearance of the mycelial walls, with grouping of miniature yeast-like bodies.

ments. The walls of the empty segments then disappeared, and the protoplasmic areas adopted a rounded shape, reverting again to the morphology of yeast.

These same bodies, on being placed again in a favorable environment, recommenced mycelial growth. It was with no small measure

of relief, in view of the strange phenomena obtained with the so-called yeasts, that I later found I was merely observing what had been described by Pasteur [10] many years ago—and it is based largely on this fact that I have the temerity to present my observations.

In effect, some fungal mycelia remain more constant than others under adverse conditions; others manifest the widest changes. On depriving *Pencillium* of

Fig. 16.—Superficial surface scarification inoculation with yeastlike organisms on orange, followed by the invasion of blue mold.

oxygen, the mycelia remains constant. *Aspergillus*, under the same conditions, segments, and in place of the mycelial filaments has chains of cells. The mycelia of *Mucor ramosus* show the most marked changes. As long as it is in free contact with the air, its mycelial filaments are slender, branching, and intertwined; but as a result of an insufficient supply of air, the hyphae segment, separate, enlarge, and are finally transformed into chains of large, round, or slightly oval cells, which in reality resemble large cells of yeast.

10. Duclaux, E.: Pasteur: The History of a Mind, Philadelphia, W. B. Saunders Company, 1920, p. 201.

Bail [11] believed in their transformation, but Pasteur showed that when these supposed yeasts were introduced into the areated must of beer they did not produce alcoholic fermentation; they produced *Mucor*. There was, therefore, not a transformation of species, but an adaption to new environmental influences with a change in form, perhaps corresponding to a change in function.

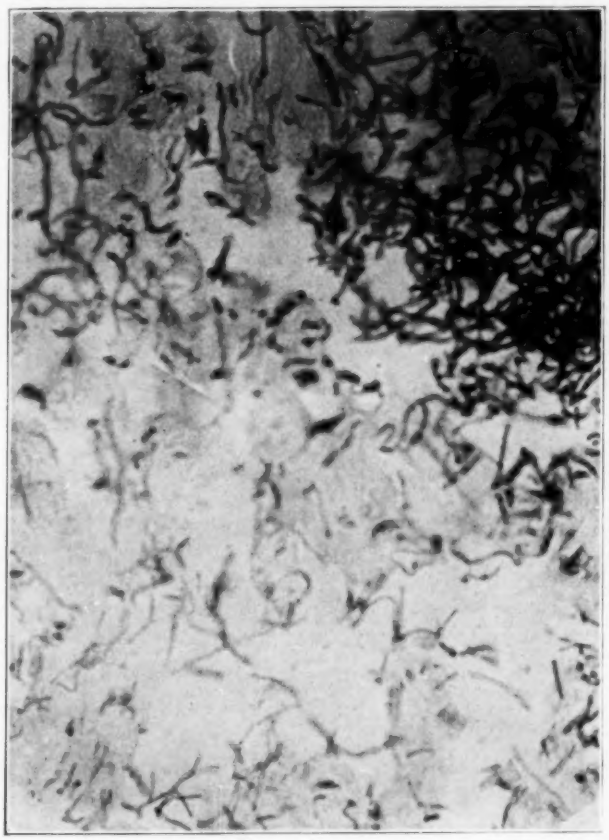

Fig. 17.—Deep pulp invasion by blue mold; yeastlike organisms are not present.

Later the same series of changes were obtained by allowing the growth to continue in the chamber until I presumed anaerobic conditions obtained. It is somewhat significant that in my case the experimental surface growth on the nails was mainly mycelial. Mycelia, however, were not present within the substance of the nails, only varying yeast forms being found; this was also observed in the oranges. The puncture apertures beneath the skin were webbed by a gray-white mycelial growth. In the substance of the pulp, however, only yeast forms were present.

11. Bail, cited by Duclaux (footnote 10).

Fig. 18.—Scraping from deeper pulp substance of infected orange (by Plunkett).

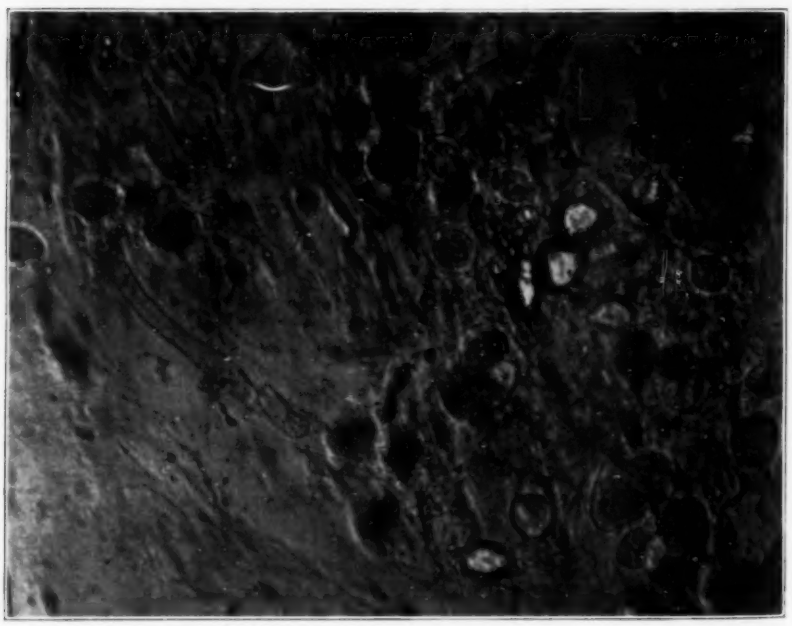

Fig. 19.—Scraping from superficial area of pulp of orange. The attempt of mycelial growth should be noted (by Plunkett).

The nails responded rather indifferently both to the application of Whitfield's ointment and crude coal tar medication. The condition in several of the nails has improved under treatment with continuous moist dressings of 1 : 10,000 mercuric chloride solution, over three and four day periods of soaking.

In the literature, from approximately 1919 to the time of writing, I found the report of seven cases of onychomycosis in which the offending organisms were definitely named. Five of these were due to *Scopularia*, one to *Aspergillus* and one to *Mucor ramosus*.

In view of the fact that one other case of infection by *Mucor* has been reported, and as the organism in this case, though not definitely classified, has been named a species of the genus *Mucor* by Plunkett, notwithstanding that the proof of the pathogenicity of the organism in these cases is somewhat wanting, I would suggest in the face of the evidence submitted that some of the so-called yeast infections are not yeast infections, but are infections due to the higher fungi, the anaerobic or spore forms of which take on themselves the morphology of the yeast, and, not satisfied with that, rob the yeast of its only apparently universally recognized characteristic, namely, budding.

CONCLUSIONS

1. Certain of the cull oranges are a source of fungous infection to man.

2. The skin of the orange is highly resistant to this fungus.

3. The pulp of the orange is readily infected by the fungus.

4. As far as can be determined, only those orange workers whose fingers are frequently in contact with the pulp or juice of the orange acquire this fungous infection.

5. The "yeastlike organism" that I believe to be the etologic factor in these cases is the spore form, or gonidia, of a fungus of the family *Mucoraceae*.

6. The species has not been determined.

ABSTRACT OF DISCUSSION

DR. FRED D. WEIDMAN, Philadelphia: The title of this paper indicates an attempt to prove the pathogenicity of Dr. Sutherland Campbell's micro-organism, and that brings up the old question of ways and means of doing it. The proper way is to satisfy all of the laws of Koch, involving the production of the disease in some animal and eventually recovering the organism from the infected animal. In dermatology this is a large order and seldom can be fulfilled; organisms behave so differently on human skin than they do on animal skin, and few animal skins are suitable for experimentation. One has to turn frequently to other ways and means and to seek other methods than reproduction of the disease in animals. Thus, in studying the relationship of black tongue and trichomycosis axillaris, I

had to depend on the similar habits or traits of the micro-organism in the two different positions to support ideas concerning its pathogenicity, that is, circumstantial rather than direct evidence. Dr. Campbell has done much the same thing in reproducing this disease in oranges. But we should not forget that we still have a place for experimentally reproducing dermatoses in the form of the human skin. In some cases, the disease is so important and serious that it is entirely unfair or criminal to attempt to reproduce some of these mycoses. In the extremely superficial and unimportant types, as erosio blastomycetica, there is no harm, particularly when one attempts auto-inoculation, for one adds only a little to what the patient already has, and this is justifiable. In Dr. Campbell's work I doubt whether it would be proper to inoculate the subungual region. It would be entirely too painful and persistent an infection to experiment with in this way; Dr. Campbell has probably gone as far as he can in his attempt to prove the pathogenicity of his organism. Regarding modes of procedures, one is able to isolate so many different species from lesions of the skin that I have formed the habit of deferring the diagnosis of the species until the last minute. It is futile to determine academically every organism that can be isolated from the surface of these lesions of the skin when dealing with a group of organisms, all of which are strangers. The one which is playing the important rôle should be determined and then identified. It appears that Dr. Campbell has established a true bill against this particular micro-organism. I am wondering how many of his fungi we swallow when we drink our glass of orange juice in the morning and whether we will not have to look for it in other conditions.

Dr. James Herbert Mitchell, Chicago: I had an opportunity to talk with Dr. Campbell at some length about his work, and it was much more extensive than would appear from his short report. I wish to mention one case in connection with oranges. I saw a man on his return from Florida with lesions in the mouth about the size of a pinhead. These were dead white and resembled those in lichen planus. To my surprise, the lesions were easily removed, and microscopically disclosed spores and short myceleae threads. The lesions responded immediately to local applications.

Dr. Laurence R. Taussig, San Francisco: One phase of the subject the essayist did not touch was the proper treatment in these cases of paronychia, regardless of the source of the infection. I have had a moderate amount of success by using a chloroform solution of chrysarobin, allowing it to flow under the nail bed as much as possible. I have had no irritation and a fair number of cures.

Dr. Samuel Ayres, Jr., Los Angeles: One frequently sees the so-called *Streptococcus paronychia,* which occurs in housewives who often have their hands in dishwater. I am wondering if any of the cases of urticaria or any of the toxic effects which have resulted from eating large quantities of oranges might have some connection wth this organism, when introduced into the gastro-intestinal tract. Undoubtedly toxic effects result when oranges are eaten. There is a type of papular urticaria that develops particularly in Mexican children who work in the orange groves, and who eat as many oranges as they want. To determine whether this has something to do with the fungus would be of interest.

Dr. Campbell, Los Angeles: In reply to the question regarding treatment, I have tried a variety of things with only a small measure of success. I finally obtained apparent cures in several of the patients by the use of continuous moist dressings of mercuric chloride, 1:10,000 solution, for three and four day periods, alternating this with the use of Whitfield's ointment.

DERMATOMYOSITIS: A CLINICOPATHOLOGIC STUDY

REPORT OF A CASE WITH COMPLETE NECROPSY *

CHARLES DAVISON, M.D.
PITTSBURGH

Dermatomyositis was first described by Wagner [1] in 1887. Uvericht [2] and Hepp [3] described similar involvements of the muscles in 1881, the former naming the condition dermatomyositis. This disease entity was first described in the United States by Jacoby [4] under the term of subacute progressive poliomyositis in 1888, and by Herrick [5] as poliomyositis acuta in 1896. In 1905, Steiner [6] collected all the cases reported in the literature, giving an accurate histologic description.

This case is reported because a complete autopsy was performed which presented unusual features not commonly found in this condition.

REPORT OF CASE

History.—R. G., a white woman, aged 24, was admitted to the Montefiore Hospital, Sept. 22, 1926, complaining of pains in the extremities and heart, inability to move the head and shoulder, shortness of breath, weakness, and redness of neck and chest as well as edema of the extremities.

The condition was first noticed in March, 1925, when she observed three dark brown spots on her forehead and redness of the neck and chest, at the same time experiencing a sensation of dizziness, black spots before the eyes and a needle-like sensation on the top of the head. A few weeks later she developed pains in both arms, and her face and feet became swollen (edematous) and painful. She sought the advice of a physician, and examination at the time showed a slight elevation in temperature, blowing systolic murmur at the apex and a rapid heart rate. A tonsillectomy was advised and performed in July, 1925. Following this, the face, hands and feet became more painful and swollen. She was admitted to the Mt. Sinai Hospital in October, 1925, where she remained for a period of six weeks. During this interval she developed a stiff neck and was not able to move the head and shoulder in any direction, or raise the arms upward. On Dec. 16, 1925, she was admitted to the Presbyterian Hospital. At the end of five weeks she

* Submitted for publication, July 21, 1928.

* From the Neuropathological Laboratory, Montefiore Hospital, New York.

1. Wagner, E.: Ein Fall von acuter Polymyositis, Deutsches Arch. f. Klin. Med. **11**:241, 1886.

2. Unvericht: Dermatomyositis Acuta, Deutsche med. Wchnschr. **17**:41, 1891.

3. Hepp: Ueber Pseudo-trichinose, Eine besondere Form von acuter parenchymatoser Polymyositis, Klin. Wchnschr. **24**:297, 1887.

4. Jacoby: Subacute Progressive Polymyositis, J. Nerv. & Ment. Dis. **15**: 697, 1888.

5. Herrick: Polymyositis Acuta, with Report of a Case Presumably of Syphilitic Origin, Am. J. M. Sc. **3**:414, 1896.

6. Steiner, W. R.: Dermatomyositis, J. Exper. Med. **6**:407, 1905.

developed a cough and began to expectorate a thick, grayish sputum, which later became greenish yellow and foul-smelling. A bronchoscopy was performed, and pus was removed.

Shortly after her discharge from the Presbyterian Hospital she developed a severe sore throat. She was readmitted to the hospital with a temperature of 102 F., presenting the same symptoms as before. After a stay of two weeks she improved and was discharged in May, 1926, when she remained well for a few weeks. Later the symptoms recurred, and the patient was admitted to the Montefiore Hospital in September, 1926.

The patient had had measles in childhood and occasional sore throats. She was married at the age of 22 to a man who had cerebrospinal syphilis. She had never been pregnant.

Two sisters had died of malnutrition; one brother had died of measles when 1 year old, and one sister had died of internal hemorrhage (?) at the age of 28.

Physical Examination.—Examination showed a white woman, undernourished, lying helplessly in bed; she was unable to sit up, and held the head rigidly with the arms at the sides. The skin of the head, neck, chest and upper arms showed a peculiar brownish pigmentation. There was some edema about the face and feet which did not pit on pressure. The patient was generally thin. The sternocleidomastoid muscles could not be felt, and the head could not be supported alone. There was pain on pressure of the neck. The pupils reacted to all stimuli. The cranial nerve was not involved. The chest showed a limited expansion on the right side, both anteriorly and posteriorly. There was dulness on percussion at the base of the right lung posteriorly. At the level of the fifth interspace bronchovesicular breathing was heard. Below this level, there was cavernous breathing. Râles were noticed on the left side. The heart showed an increased cardiac dulness to the right of the midsternal line, with a presystolic and diastolic murmur at the apex. The blood pressure was 110 systolic and 70 diastolic; the pulse rate was 90. The liver was palpable 2.5 cm. below the costal margin.

The extremities showed a partial ankylosis of the shoulder and elbow joints with muscular wasting, more marked in the upper extremities. The arms could not be raised above the elbows, and the shoulders could not be raised from the pillow. The muscles of the thigh were weak, and painful on pressure. All deep reflexes in the upper extremities were diminished. The knee and ankle jerks were active.

The electrical reactions showed a normal response in the muscles of the upper extremities. The platysma and sternocleidomastoid muscles did not respond to galvanism or faradism. There were no opening contractions.

On admission the patient had a temperature of 102.8 F. For the first six days, the temperature ranged between 99 and 102.6, and then between 99 and 100, until about one week before death, when it rose to 103.4.

Laboratory Observations.—The urine was negative for albumin, but showed a few granular and hyaline casts. The red blood cells were normal. The white blood cells showed leukocytosis, 20,900 white cells with 74 per cent polymorphonuclear leukocytes. The basal metabolic rate was plus 20. The Wassermann reaction of the blood was negative. X-ray examination of the chest showed a partial consolidation of the left lower lobe, extending from the sixth rib to the diaphragm, possibly that of an unresolved pneumonia. The heart was normal.

X-ray examination of the extremities disclosed moderately advanced arthritic changes of the right elbow, especially in the articular surface of the olecranon.

There was slight periostitis along the upper third of the shaft of the radius. The right shoulder revealed slight arthritic changes and moderate amount of bone atrophy along the upper end of the shaft of the humerus.

Anatomically, the condition was diagnosed as muscular atrophy, generalized lymphoid hyperplasia, status lymphaticus, contractures with atrophy of the skin of the extremities, face and neck; bronchiectasis of the left lower lobe; septic ovaries and terminal bronchopneumonia.

Fig. 1.—Longitudinal section of rectus abdominis muscle, showing lymphocytic infiltration in the perimysium externum. There is marked destruction of the muscle fibers replaced by dense fibrous tissue and fat cells. Hematoxylin and eosin stain, 16 mm. apoch., ocular × 1.

The skin over the face and anterior surface of the neck was tense and smooth with a purplish color. The extremities showed slight but definite contractions at the elbow, wrist and interphalangeal joints. The overlying skin was thinned out, smooth and purplish over the fingers. The muscles were strikingly thinned out and pale. When the chest was opened thin fibrous adhesions practically obliterating both pleural cavities were observed.

Macroscopic Examination.—The heart showed a slightly hypertrophied left ventricle. The heart muscle was pale, yellowish and streaked with minute linear fibrous scars.

The right lung showed all lobes to be slightly emphysematous, the lower lobe containing scattered areas of consolidation. On section, there was moderate chronic passive congestion and slight edema throughout. The lower lobe showed innumerable confluent areas of consolidation, some purplish red, others grayish

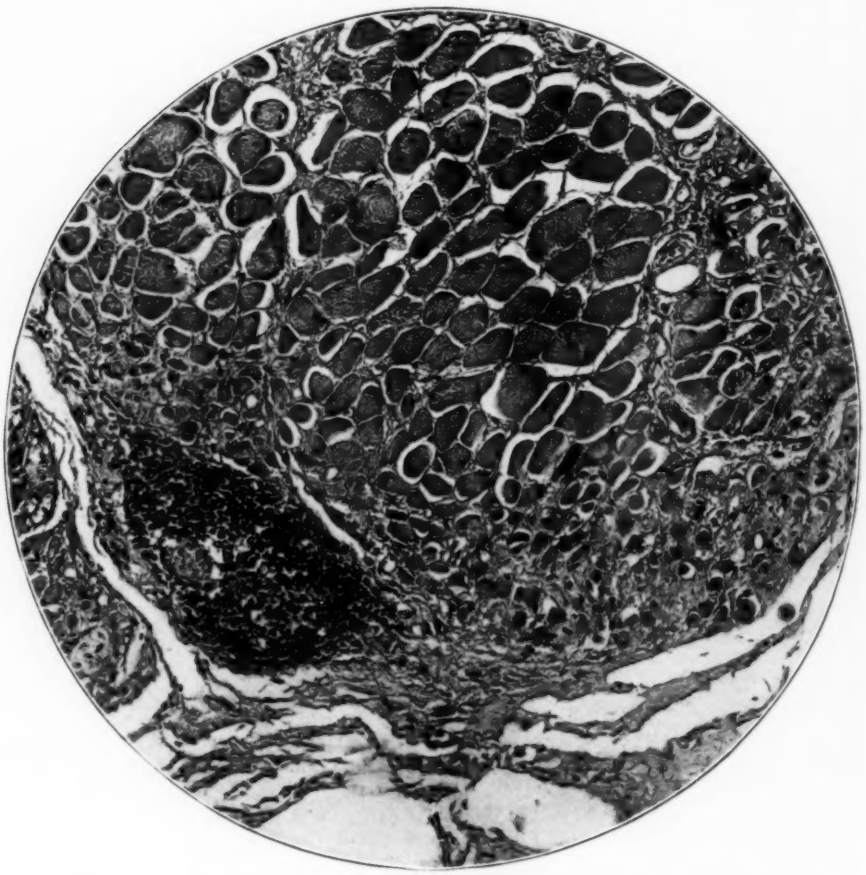

Fig. 2.—Cross-section of ileopsoas muscle showing marked lymphocytic infiltration with destruction of the muscle fibers. Hematoxylin and eosin stain, 16 mm. apoch., ocular × 1.

yellow. The bronchii were slightly dilated and congested. The vessels were normal. The left lower lobe showed changes similar to those of the right.

The liver was slightly larger and softer than the average. The capsule was thin. On section, the architecture was blurred, and the lobulations were small and somewhat irregular. The spleen was red and smooth. On section, the malpighian bodies were bound to be markedly enlarged, prominent and opaque. The suprarenal glands were smaller than the average.

In both axillae, posterior cervical regions, mediastinal root of the lungs and mesentery, the lymph glands were markedly enlarged, in some places pink, and in others yellowish, with large foci of fatty replacement in the region of the hilum. The thymus was fairly well preserved.

There was a striking atrophy and pallor of the sternomastoid, scaleni, abdominal and spinal muscles as well as of those of the upper extremities. The rest of the organs were normal.

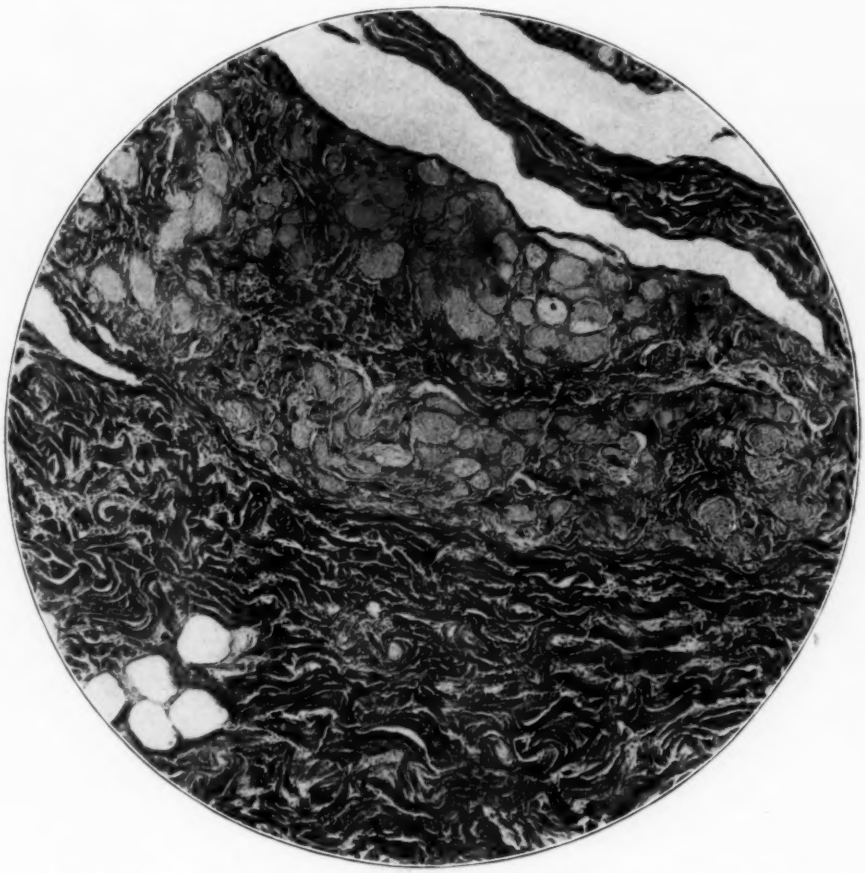

Fig. 3.—Cross-section of sternocleidomastoid muscle showing similar changes as in figure 1. Van Gieson's stain, Zeiss, 16 mm. apoch., ocular × 1.

The heart showed a slight atrophy and fatty replacement of muscle fibers. The lungs showed slight passive congestion, marked diffuse edema with scattered areas of bronchopneumonia. The bronchii were dilated, and the mucous membrane was markedly congested. Several enlarged bronchial lymph nodes showed marked hypertrophy and vascularization of the germinal centers. The spleen showed a slight diminution of the red and gray pulp with slight diffuse fibrosis. The malpighian bodies were variable in size, and their centers were replaced by endothelial hyperplasia. The thymus was fairly well preserved and showed

numerous Hassall corpuscles. Several sections from lymph nodes showed foci of endothelial hyperplasia with alternating areas of hyaline replacement. The germinal follicles were enlarged in places; in others, they were atrophied. The brain and spinal cord did not show any changes.

Sections of muscles from the tongue, sternocleidomastoid, pectoralis major and minor, deltoid, rectus abdominis and ileopsoas muscles were taken, fixed, embedded in celloidin and stained with hematoxylin and eosin, van Gieson, Sudan III and Del Rio Hortega stains.

Fig. 4.—Cross-section of sternocleidomastoid muscle showing replacement of muscle fibers by dense fibrous tissue. Hematoxylin and eosin stain, Zeiss, 4 mm. apoch., ocular × 3.

Sections of muscles of the tongue with part of the epidermis showed a dense network of coarse connective tissue in the submucosa with round cell infiltration. The muscle fibers of the tongue did not show any marked changes. Longitudinal and transverse sections from the rectus abdominis, ileopsoas and sternocleidomastoid muscles, (figs. 1, 2 and 3) showed distinct atrophy with degeneration of the muscle fibers. Throughout the sections there were marked areas of round

cell infiltration, consisting of lymphocytes, plasma cells and an occasional leukocyte. These infiltrations were often found in the vicinity of blood vessels, within the perimysium externum and internum and at times actually invading the muscle structure itself (fig. 1). The connective tissue was markedly increased, especially in the perimysium externum, and rich in newly formed blood vessels. This was best observed in sections of the sternocleidomastoids in which the muscle fibers were completely replaced by connective tissue (figs. 3 and 4). Increase in fat cells

Fig. 5.—Longitudinal section showing fatty degeneration of the muscle. Sudan III, Zeiss, 8 mm. apoch., ocular × 1.

and fatty degeneration of the muscle were frequently observed (fig. 5). In places large multinucleated giant cells were found. The muscle fibers presented various changes; they were normal, swollen or atrophied, and in a great number of these striations were completely gone. In some, either the cross or the longitudinal striations alone were observed (figs. 6 and 7). Waxy degeneration of different gradations (fig. 6) with the presence of a complete homogeneous mass as well as occasionally vacuolic degenerations was noticed. Breaking down of the sarcolemma sheath (fig. 7) and the spreading out of the fibrils were

commonly found. Sometimes the sarcolemma showed blebbing. The nuclei presented various changes, depending on the changes in the muscle fibers. When the waxy degeneration was marked, the nuclei lost their definite shape. In the unchanged fibers the nuclei were normal, but in the areas of degeneration, they were increased in number and occupied any field of the muscle fiber, instead of being located at the periphery (figs. 6 and 7). In places chains of rod-shaped nuclei (fig. 7), at times linked to one another, at times separated, could be found.

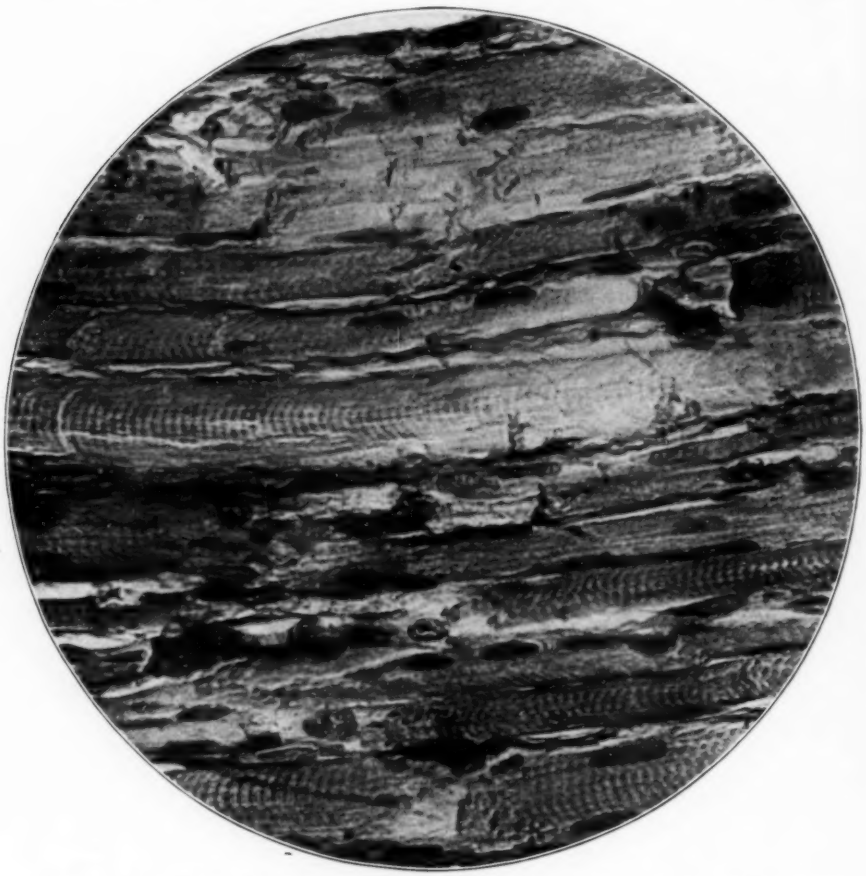

Fig. 6.—Longitudinal section of muscle showing loss in striations, waxy degeneration, vacuolic degeneration and increase in the sarcolemma nuclei. Van Gieson's stain, Zeiss, 8 mm., apoch., ocular × 3.

In some muscle fibers, the nuclei were increased to the extent that they covered up the entire field of the muscle fiber.

COMMENT

The case presented was of interest because of the rarity of this condition and because of the scarcity of records of complete necropsies performed in such cases. From the etiologic point of view, little can be

said, except that the condition is probably of infectious origin. The onset, fever, progress of the disease and the inflammatory reactions found in the muscles would lead one to suspect that one is dealing with an infection. Clinically, this case was of interest in that the sore throat led the patient to consult a nose and throat specialist, who performed a tonsillectomy, with the subsequent development of pulmonary abscess. In a case reported by Friedman [7] a similar condition developed.

Fig. 7.—Longitudinal section of muscle showing breaking down of sarcolemma sheath, loss of striations and chains of rod-shaped nuclei. Van Gieson's stain, Zeiss, 4 mm. apoch., ocular × 3.

These cases are frequently confused with those of scleroderma, trichinosis and neuromyositis. The greatest difficulty is differentiation from scleroderma. In scleroderma there is always pitting on pressure,

7. Friedman, E. D.: Dermatomyositis, J. M. & Record **123**:383, 1926.

as the edema involves the cutis only, but early in the disease such a differentiation is not easy. In trichinosis the gastric symptoms are marked at the onset, and the muscles chiefly affected are those of the eyes, pharynx and larynx. The edematous swelling in the face and eyelids develops early. The blood picture shows an increase in the eosinophils. In neuromyositis there is tenderness along the nerves, sensory disturbances and paralysis, accompanied by a reaction of degeneration, while the muscular swelling and edema are less prominent.

The next factor of importance is the presence of an enlarged thymus and a general lymphatic hyperplasia. Whether the latter condition has any bearing on the dermatomyositis is difficult to state. In none of the cases so far reported was a status lymphaticus found.

From the data collected in the literature, it is observed that the cause of death in most of these cases is bronchopneumonia.[7]

CONCLUSION

A case of dermatomyositis of two years' duration is presented. There was marked involvement of all the muscles, especially of the sternocleidomastoid, with a sore throat leading to a tonsillectomy, followed by pulmonary abscess and finally death.

Necropsy revealed the typical and classic lesions found in cases of dermatomyositis, with a coexisting status lymphaticus.

DERMATOMYOSITIS OR SCLERODERMA?

REPORT OF A CASE *

WILLIAM ALLAN, M.D.
CHARLOTTE, N. C.

In August, 1923, a white man, a mill operative, aged 46, was referred to me complaining of stiff arms and legs. His trouble had started in November, 1922, with diarrhea, which had continued for six months. In December, 1922, his knees had become stiff and painful on rising, and after a week or so the pain had extended to the ankles, which had become much swollen; the skin had become smooth, shiny, red and angry-looking from the middle of the feet to the knees. As in one of the cases reported by Longcope,[1] the man was thought by his physician to be suffering from chronic interstitial nephritis, at this time. The shins were extremely painful to the touch. After a few weeks, the wrists became painful; the forearms swelled and became stiff and painful, and the skin on the wrists became red. The temperature was taken repeatedly and found to be normal. For seven months, he had had a great deal of occipital headache, which then had disappeared. He had not had any sweats. During the early months of his illness, there had been some nausea, which he attributed to exhaustion, as he continued at work in the mill until June 1, 1923. He then remained in bed for three weeks and the edema decreased considerably, but the extremities became steadily firmer and their mobility as steadily declined. During July, 1923, he lost almost all motion in the elbows.

When seen in August, 1923, the flesh of the forearms and legs felt as firm as wood, but was not painful to pressure, and pitting could not be produced. The skin was dry, thickened and tough like leather and was markedly pigmented and brown, from the ankles to the midleg and over the lower half of the forearms, as is shown in figure 1.

Around the ankles there was desquamation of small white scales like chaff. The muscles of the legs and forearms, and the lower part of the biceps on each side were hard and fixed to the skin. The ankles had lost almost all motion; the wrists had partial motion, and the tendons of the biceps had contracted so that full extension at the elbows was no longer possible. Flexion and extension of the fingers and toes had in large measure been lost.

Physical examination was otherwise negative. The temperature was normal, and the spleen was not palpable. The appetite and the bowels were normal, and the patient slept well except when a feeling of needles sticking his legs and arms kept him awake. He did not lose any color or flesh. The examination of the blood showed: hemoglobin, 95 per cent; red blood cells, 5,536,000; white blood cells, 11,400; polymorphonuclears, 83 per cent; lymphocytes, 14 per cent, and eosinophils, 3 per cent. The Wassermann reaction of the blood was negative. The results of the urinalysis were normal.

Sections of tissue removed from the forearm are shown in figures 2 and 3.

Dr. H. P. Barret's report on the microscopic examination calls attention to the replacement of the normal subcutaneous tissue by fibrous tissue which binds the skin tightly to the muscle; to localized areas of infiltration of round cells beneath the skin, and general infiltration of round cells between the muscle fibers;

---

* Submitted for publication, July 19, 1928.

1. Longcope, W. T.: Hypoglycemia in Scleroderma, J. A. M. A. **90**:1 (Jan. 7) 1928.

to the fragmentation of muscle fibers with formation of fibrous tissue between the fibers and to the absence of striae in some fibers.

While under observation, the skin over the ankles became red and inflamed several times for ten days at a time, and in the spring of 1924, the patient developed

Fig. 1.—Dry, thickened skin, with marked brown pigment from the ankles to the midleg, and over the lower half of the forearms.

an ulcer of the leg, which was extremely troublesome. He was given various drugs as well as treatment with baking, massage and electricity, all without benefit.

He was seen in March, 1925, with a large superficial ulcer below the external malleolus on the right foot. He seemed slightly improved. He had been at work

all winter. The calves of the legs were somewhat softer, and the inner sides of the forearms were slightly softer.

In July, 1928, this man was found to have almost recovered from his disability. The muscles of both forearms and calves were soft and could be seen to contract individually. The skin was soft and could be made to glide normally over the muscles. The hardening of the lower half of the muscles of the biceps with shortening had disappeared. From 80 to 90 per cent of motion had returned to the fingers, wrists and ankles, although the muscles cramped when extremely tired. The shins were still deeply pigmented, and the old ulcer on the outside of the right foot was still red but was covered with shiny new skin. During the five years since the time the patient had been seen, nature had brought about an almost complete recovery from what seemed an utterly hopeless condition.

Fig. 2.—Section of tissue from the forearm.

In presenting this case history as one of dermatomyositis, how may it be differentiated from the generalized type of scleroderma? A comparison of the current descriptions of dermatomyositis [2] and sclero-

2. Steiner, W. R., in Osler: Modern Medicine, Philadelphia, Lea & Febiger, 1927, vol. 5, p. 784. McLester, J. S.: Dermato-Myostis, J. A. M. A. **87**:1990 (Dec. 11) 1926. Finley, F. G.: Dermato-Myositis, Canad. M. A. J. **13**:391 (June) 1923. Langmead, F. S.: Relationship between Certain Rare Diseases: Generalized Scleroderma, Calcinosis, Dermato-Myositis, Myositis, Fibrosis, Arch. Pediat. **40**: 112 (Feb.) 1923. Moore, C., and Kock, L. A.: Dermato-Myositis: With Report of a Case with Necropsy, Am. J. Dis. Child. **35**:71 (Jan.) 1928.

derma [3] tend to confirm the suggestions of Langmead [4] and of Friedman [5] that they are the same condition, for the following reasons:

1. The etiology of these conditions is unknown. Dermatomyositis has been attributed to bacterial infections (because of fever, angina, splenic tumor and the isolation of staphylococci), to protozoa [6] and to toxins from drugs and foreign proteins. Scleroderma has been considered a rheumatic infection, a falaria sanguinis hominis infestation, a trophoneurosis and a condition of hypothyroidism.

Fig. 3.—Section of tissue from the forearm.

2. The morbid anatomy in the two conditions is the same. The essential changes in both dermatomyositis and scleroderma, in both skin and muscles, are edema, cellular infiltration, narrowing or obliteration of the smaller blood vessels, degeneration of the muscle fibers and skin, followed by fibrous invasion throughout and atrophy.

---

3. Malloch, A., in Osler: Modern Medicine, 1927, vol. 5, p. 762. Stelwagon, H. W.: Disease of the Skin, ed. 8, Philadelphia, W. B. Saunders Company, 1916, p. 606. Longcope (footnote 1).

4. Langmead (footnote 2, reference 3).

5. Friedman, E. D.: M. J. & Record **123**:382 (March 17) 1926.

6. McLester (footnote 2, reference 2).

3. There is no difference in the extent and distribution of the lesions.

4. The method of onset in dermatomyositis and scleroderma is the same; the onset in both conditions may be acute, with edema, fever, pain and other manifestations, or it may be insidious, as a gradually increasing hardening of the skin and muscles with dermatitis.

5. The symptoms and clinical course of both conditions are practically the same. In both, such prodromes as malaise, anorexia, pains in the extremities and headache are present. In both, these vague pains and stiffness of the extremities or trunk quickly become localized in the affected muscles; in the acute form of both conditions, fever may be present and edema may appear either over the affected muscles, or over other parts of the body; in both, the face is apt to show edema first. In both, an early symptom may be dermatitis of an extremely variable character, followed by pigmentation. Mention is not made of an enlarged spleen in scleroderma. There may be sweating in both conditions. Neither reflexes nor sensation are disturbed in either condition, although in both there may be paresthesia. Angina has been described in dermatomyositis and stomatitis in scleroderma. Involvement of the muscles of respiration or deglutition is apt to be followed by fatal bronchopneumonia in either disease. Muscular atrophy with contracture is common to both conditions. Sclerodactylia has been considered pathognomonic of scleroderma, and as pointed out by Langmead,[4] whenever this symptom has appeared in dermatomyositis the diagnosis has promptly been changed to scleroderma. The clinical course in both conditions is the same; a few patients recover; some show periods of improvement followed by relapse, and a majority do not show any improvement. The prognosis is unfavorable in both diseases, and in both the same treatment is recommended and seems equally futile.

Apparently, the difference between dermatomyositis and scleroderma lies in the observer. Dermatologists describe the condition of the skin and its pathology, while internists, as a rule, pay scant attention to the skin; they are tremendously impressed by the loss of motion in the extremities, and hence describe this condition primarily as myositis.

LIQUID OXYGEN IN DERMATOLOGY *

H. G. IRVINE, M.D.
AND
D. D. TURNACLIFF, M.D.
MINNEAPOLIS

The use of liquid oxygen in dermatology is not new; in fact, liquid air appears to have been the first agent used on the skin for refrigeration. It was first used in 1898, and during the next ten years there were a number of publications concerning it. A majority of those who used it were agreed that it was a worth while agent; but they doubted its practicability, as it could not be made commercially and could not be transported.

After Dr. William Allen Pusey,[1] in 1907, suggested the substitution of carbon dioxide snow, liquid air was apparently soon forgotten, and little mention was made of it after 1910.

Since the manufacture of oxygen gas has been made an important industry, liquid oxygen is available in all these plants and can be secured in at least seventy-five of the larger cities of the country at an average price of $1.50 a liter. With the advent of the Dewar flask, which is practically the same as a heavy metal thermos bottle, the liquid can also be transported, and will keep for several days.

Since a supply is now generally available, it seemed worth while to review the previous work and to attempt further experiments to test its value.

REVIEW OF THE LITERATURE

As many of the men who are at present active in the practice of dermatology have entered this branch of medicine since the period in which liquid air was first used, a brief review of the literature may be in order. The first paper published was by Dr. A. Campbell White,[2] in 1899. He mentioned Prof. Charles E. Tripler as making the liquid and urging its use in medicine. According to his paper, the liquid air was —312 F., and contained three parts of oxygen to one of nitrogen by weight, four to one by volume and no hydrogen. At this time they kept it and transported it in a can within a larger can, the space

* Submitted for publication, July 14, 1928.

* Read at the fifty-first annual meeting of the American Dermatological Association, Washington, D. C., May 1, 1928.

1. Pusey, W. A.: The Use of Carbon Dioxide Snow in the Treatment of Nevi and Other Skin Lesions, J. A. M. A. **49**:1354 (Oct. 19) 1907.

2. White, A. C.: Liquid Air: Its Application in Medicine and Surgery, M. Rec. **56**:109, 1889.

between being filled with hair felt. Experiments were conducted to ascertain its effect on germs. Cultures exposed either to the cold or in the liquid direct were not affected. White first used the liquid on ulcers of the leg and claimed that he obtained excellent results. He advocated it as a local anesthetic, making the point that the knife could be used without hemorrhage. Good results were claimed to have been obtained in ulcers, bubos, boils and carbuncles, these lesions being aborted when treatment was instituted early enough; claim was made that pain was instantly relieved, and that sloughing did not occur except in advanced cases. The liquid was applied along the spinal nerve centers in intercostal neuralgia and in herpes zoster; relief from pain followed, and the zoster lesions dried up in from three to five days. The application was made just once, and was not severe enough to cause blistering or sloughing. In a later paper, White admitted that some sloughing had occurred. Two patients with erysipelas were treated by rolling a glass bulb filled with the air over the surface, and, as a result, the surface temperature, pain and inflammation subsided. In one case of ivy poisoning, the air was sprayed on one part and the usual dressing applied over all; the air-treated area healed more rapidly. Practically nothing is said as to the technic used.

White's second paper [3] was read before the Section on Pediatrics of the American Medical Association in June, 1900. Further reports were made relative to the effect on bacteria under more prolonged exposures. A good result was obtained in lupus vulgaris by spraying the air on and freezing it sufficiently to cause an ulcer, which healed with good results. In this paper, good results were reported in the treatment of patients with epithelioma.

In a third communication in 1902,[4] treatment in malignant conditions was reported. At this time the Dewar bulb was in use as a container. Before this, a supply of from 5 to 10 gallons was needed for a day, so one can see how impractical it was.

White mentioned the use of new instruments for application of the air, but did not describe the instruments or his technic. A definite number of cases of carcinoma was not cited nor any definite results, but he concluded after working with S. G. Tracy, who was treating patients with the x-ray, that the liquid air was preferable on superficial lesions. One must remember that at that time little was known of x-ray dosage and burns were resulting. It is interesting to note that in the same journal, William Allen Pusey reported on the use of lead foil as a

3. White, A. C.: Possibilities of Liquid Air to the Physician, J. A. M. A. **36**:426 (Feb. 16) 1901.

4. White, A. C.: Possibilities of Liquid Air to the Physician, Interstate M. J. **9**:657, 1902.

protectant to normal skin while using x-ray. White gave results of treatment in cases of carcinomas as being valuable in three ways: (1) after about one-half hour of pain from the application, all patients said that the previous pain of the lesion was lessened or gone; (2) hemorrhage was controlled, and (3) ulcerating foul lesions were cleaned up.

After four years of experience with liquid air, Whitehouse [5] stated he was convinced that liquid oxygen was a remedy of real worth, but because it could only be made in the laboratory, he believed that it would never come into general use. He used the liquid on a swab, but did not give any technic, except to mention a short or long exposure and light or firm pressure. He reported good results in about twenty-five cases of lupus erythematosis, lupus vulgaris, nervi and carcinomas. The question of pain was commented on, and he regarded the divergence of opinion as due to differences in technic.

In 1910, Gold [6] described Tripler's method of making liquid air and compared experiences with the air and carbon dioxide snow. He stated that all those who had had both agents used on them agreed that the liquid air was less painful. Furthermore, he expressed the opinion that liquid air surpassed carbon dioxide snow in every respect except availability. According to his experience, it was much better than any caustic, electrolysis or excision for all superficial growths.

In 1907, Bowen and Towle [7] gave a review of the literature and concluded from published reports that liquid air was a valuable agent, although impractical at that time on account of the difficulty of obtaining it. In an effort to describe a technic, they quoted Trimble's interpretation of pressure. Light pressure is compared to that used with a Paquelin cautery, which is employed in the treatment of lumbago to produce a slight erythema. Medium pressure is sufficient to keep the applicator from slipping along the surface, which causes a slight depression.

Hard pressure causes a definite depression in the skin. Light pressure was used in the treatment of lupus erythematosis and port wine marks, and medium in pigmented and hairy nevi, angioma and lupus vulgaris. Hard pressure was used from twenty to sixty seconds on scattered lupus nodules and epitheliomas.

This comes nearer to giving one a working idea of technic than any other publication we have seen. While this agent was called liquid air, it was practically liquid oxygen, as the nitrogen rapidly evaporated. At

5. Whitehouse, H. H.: Liquid Air in Dermatology: Its Indications and Limitations, J. A. M. A. **49**:371 (Aug. 3) 1907.

6. Gold, J. D.: Liquid Air and Carbonic Acid Snow: Therapeutic Results Obtained by the Dermatologists, New York M. J. **102**:1276, 1910.

7. Bowen, J. T., and Towle, H. P.: Liquid Air in Dermatology, Boston M. & S. J. **157**:561 (Oct. 24) 1907.

present, pure liquid oxygen is used. The commercial plants make oxygen gas, and the nitrogen comes off during the process. The liquid oxygen is really a by-product and is used during the gas making process to help reduce the temperature of the compressed air in the final stage.

TECHNIC

Liquid oxygen is made by compressing air. There are four stages of compression; the first is about four atmospheres, the second about sixteen, the third about sixty-four and the last about 200 or approximately 3,000 pounds (1360.77 Gm.) to the square inch. As considerable heat is created with the compression, the air must be constantly chilled as it passes through the coils. Between the first and second stage, it is passed through a solution of caustic soda to remove the carbon dioxide, and later it is passed through dry anhydrous caustic potash to further remove remnants of this gas. In the last cylinder, it is further cooled by the expansion of the gas itself by the passing off of the nitrogen and by a coil passing through the bottom of the cylinder in which the liquid oxygen has formed and in which a certain amount of the liquid is automatically kept. It is possible in any of these plants, therefore, to draw off a certain amount of the liquid oxygen during the operation of the plant. Carbon dioxide cannot be entirely eliminated and approximately every two weeks it collects in sufficient quantity in the form of snow in the coils in the last tank to plug them up. The plant then stops operations for the time necessary to let this melt and run out, or warm water may be used to hasten this process. If so desired, the liquid oxygen on hand at this time may be drawn off and stored in Dewar flasks, in which it keeps for several days, making it possible therefore to have a supply of the liquid available even when the plant is shut down.

Dewar flasks are made in various sizes up to several liters, and in them the liquid may be transported. There is a good deal of variation in thermos bottles, but a good quart thermos will make a supply available for about three days. When liquid oxygen was used before there was considerable discussion as to technic of application and as to the pain incident to its use. No technic was suggested that another could use accurately, as each person depended apparently on his own idea of the amount of pressure to be used and that amount could not be described accurately. The result depended on time, pressure and the degrees of saturation of the swab used; on account of these uncontrolled factors a definite time could not be stated.

From our own experience we believe that the pain resulted largely from the effort to use pressure. When the agent is not applied to the normal skin there is little pain, but if in attempting to use pressure the liquid gets beyond the lesion and freezes the normal skin considerable pain may result, not only during the application but afterward. We believe it is unnecessary to use any amount of pressure; instead, the liquid is simply kept on the lesion until it freezes, and then is reapplied just enough to keep the lesion frozen for a given time. In this way it is easy to keep away from the skin surrounding the lesion, as one can see the line of demarcation of the freezing and can easily keep the preparation just at the edge of the lesion. In all cases we have used a swab of cotton rolled on the ordinary wooden applicator the size of which varies according to the size of the lesion. The question of saturation can be disregarded except that a well saturated swab lasts longer and freezes the lesion faster. If one uses an applicator long enough to allow one to dip into the container instead of having to pour the liquid into a shallow receptacle, one conserves the supply.

In order to observe the effect of liquid oxygen on the normal skin, several applications of liquid oxygen were made on the flexor surface of the forearm of one of us. The application was made with a small swab without pressure for one, two, three, five and ten seconds. Erythema appeared on all the areas within a few hours. The applications given at the one and two second periods remained as an erythema only. The application given at the three second period showed slight vesiculation which dried in from two to three days. The applications given at the five and ten second periods showed distinct vesiculation, the former drying in a week, the latter disappearing only after two weeks and leaving a slightly depressed smooth scar.

AUTHORS' EXPERIMENTAL WORK

During the past seven or eight months we have treated about seventy-five patients. It has not been possible in all cases to observe and note the final results, so not all those can be reported.

In the literature, the use of liquid oxygen in destroying warts has just been mentioned. The removal of warts is important, and a number of papers have been written on the subject, particularly concerning the embedded palmar and plantar ones which are so painful. While x-ray and radium are usually satisfactory, neither are practical in the case of a child with fifteen or twenty warts on the hands. Neither can one use a method which is painful without an anesthetic. We have treated a number of patients with this condition, having complete records of twenty-two. These cases include some patients with only one or two small flat lesions, some with twenty or thirty up to the size of a small cherry stone, and a few embedded palmar and plantar lesions. So far we have not had a complete failure; in most of the cases the warts peeled off in from one to two weeks. A second freezing had to be used in three patients, and a third freezing in two. A typical case is cited.

A man had a lesion which covered part of the end of the thumb and extended under the nail; it had been present for about a year and was always sore to the touch. The nail was trimmed away and the lesion frozen. In ten days, the lesion peeled off except some at the edge of the nail which probably was insufficiently frozen. The patient experienced some pain for three or four hours, but the soreness which he had experienced previous to freezing was no longer present. The second time the nail was trimmed more carefully and the lesion kept frozen for three minutes. It was then immersed for about five minutes in cold water, and a dressing of zinc paste was applied; on this occasion the man said that he did not feel any pain. The skin was left normal without a scar.

A young woman with a large painful plantar wart near the heel said that there was practically no pain at any time from freezing, and in twenty-four hours the soreness was out of the lesion so that she could walk comfortably.

A number of the patients treated were children, and in no case was there sufficient pain to bother them. When the freezing is confined to the lesion, as it easily can be, there is practically no complaint. The application is made with a swab of the proper size, the lesion is frozen until the line of freezing comes to the skin, and then just enough liquid oxygen is reapplied to keep the lesion frozen to this point. Small lesions are kept frozen a minute, larger ones from two to three minutes.

In our experience this is a more satisfactory method, taking into consideration the time, the pain and the cost than anything else we have used.

The suggestion that we try the liquid oxygen especially on warts and dermatitis venenata, such as ivy poisoning, came from Mr. Elmer Smith, the owner of the plant, which has furnished us with an unlimited supply for our experiments. Unfortunately, we started our work too late in the fall for the cases of ivy and we have only recently had opportunity to try this method on this type of case.

When this man presented himself, he had an acute vesicular dermatitis which had appeared following a trip into the woods. There was a palm-sized patch on the flexor surface of one arm. This patch was frozen lightly by mopping the liquid over the lesions several times. No dressing was applied. Within twenty-four hours all itching had disappeared, and the lesions had dried up by the fifth day; the affection did not spread. One of us had taken care of this patient, who is susceptible, on another occasion, when it had taken nearly two weeks of moist dressings to get a result. Mr. Smith, mentioned previously, is himself susceptible to ivy poisoning, and he states that liquid oxygen always gives him relief after one application. Because of the reported results in ivy dermatitis, we tried the application twice on some vesicular patches of dermatitis herpetiformis. While the lesions dried up almost entirely in the course of three or four days, there was not any relief from the itching as compared with that secured in this case by the use of ultraviolet ray.

Freezing was tried in five cases of herpes zoster. The first patient presented an extensive form of the disease with lesions over the right shoulder, the upper part of the chest and the arm; silver nitrate was being used according to a suggestion of Dr. Sweitzer. On the patient's second visit to the clinic there was one new group on the arm, and this was frozen by mopping on the liquid. The lesions were large and tense when the application was made, the next day they were flabby and at the end of six days they were entirely gone. Healing took place sooner than in the places treated with silver nitrate. In three other cases in which the eruption was not extensive, developed lesions dried up similarly and those that were just coming were aborted. In one other

extensive case with eruption over the back and the chest, the lesions did not dry up so rapidly, but the same effect was noted so far as aborting the beginning lesions.

Freezing was tried in five cases of psoriasis. In some of these, lesions were treated several times a few days apart, but in none of them was any particular benefit noted.

In one case of parapsoriasis of the plaque type, treatment was given with the idea of producing desquamation, but without success.

Seven patients with seborrhoic keratoses were treated. In some of these, the freezing had to be repeated, probably owing to incorrect technic. One needs to keep these lesions frozen for a half minute when the lesion is only slightly thickened and from two to three minutes when the lesion is distinctly thick and warty. In one patient there were several slight keratoses, one epithelioma of the rodent ulcer type and one well developed ulcerating epithelioma; the keratoses and the rodent ulcer were frozen with apparent good results. In these cases the result is satisfactory from the cosmetic standpoint, and scarcely any pain was experienced in the treatment. These results are in accord with the early work done and with those obtained by carbon dioxide snow, but we believe the liquid oxygen is much easier handled on small and irregular lesions.

One patient with lupus erythematosus was treated. The result was about the same as that obtained with carbon dioxide snow, but, except in small spots, it does not compare with results now being obtained with a gold preparation.

We have treated three patients who had small pigmented and papillomatous moles; these were frozen with the same technic as that used for warts, care being taken not to freeze the adjacent skin. The results were satisfactory, and because results can be obtained more quickly and without pain, we believe the method better than the use of the electric needle in many cases, especially in children. Probably better cosmetic results can be obtained with the needle in lesions with sloping edges.

Four patients with small, raised, vesicular nevi have been treated with results corresponding to those obtained with carbon dioxide snow. We believe the liquid oxygen causes less pain as pressure is not needed, and it is more easily adapted to small and irregular lesions, making it possible to have the application definitely limited to the lesion.

Two patients with lichen chronicus have been treated. One was a man with a plaque near the ankle. After the first application the condition was much improved, but he did not return until there had been a recurrence, and as he could not give us a satisfactory opportunity for observation liquid oxygen was not tried again. The other patient had two nickel-sized plaques adjoining a large plaque previously treated with

x-ray and violet ray. The two plaques had been present for several years. After the second application there was no more itching and the skin was smooth. This was only recently done, so we cannot accept this as a result as yet. It would appear that with the proper technic results might be expected in these cases, but we will have to have more experience before suggesting the technic or knowing possible results.

One patient, an Indian woman, with a tuberculosis verrucosis cutis, consisting of a large plaque on the flexor surface of the left forearm, is under treatment at the present time. Sections of this have been frozen sufficiently to cause slight vesiculation which appeared in twenty-four hours; this dried to a crust in from three to four days, and in ten days peeled off, leaving the skin smooth. Treatment in this case was interrupted on account of illness in the family, so further observation is delayed. The result, however, in the first part frozen appears hopeful.

In ten patients with scattered remnants of epidermophytosis of the hands, good results were obtained by freezing and dressing with zinc paste. When freezing was applied to larger plaques or patches of the vesicular type, there was not any apparent benefit. Applications to chronic thickened plaques were followed by marked improvement.

One patient in whom the condition was diagnosed as tinea imbricata has been interesting. The infection covered the arms, shoulder and chest. This patient was shown at the Minnesota Dermatological Association, and at the time had not been relieved by various applications during a period of several months. I asked the privilege of trying the liquid oxygen. At first we mopped the liquid on a few lesions on the arms by passing the swab slowly over the lesions probably freezing them for two or three seconds, for the purpose of desquamation. The lesions were reddened and peeled. The result so satisfied the patient, that we went on with the treatment. Four applications were made between October 31, and March 1, each time going over whatever was left until it all cleared up.

CONCLUSIONS

1. A review of the literature indicates that nearly all who used this agent agreed that it was invaluable but impractical on account of the inability of obtaining it. Liquid oxygen is now made commercially in one or more plants in many cities of the country. It can be transported and will keep for a number of days in a metal Dewar flask. The cost is about $1.50 a liter.

2. It offers a practically sure, quick and painless method for removal of all types of warts, including the plantar type.

3. It can be used more quickly and less painfully than the electric needle in removal of pigmented, hairy and papillomatous nevi. This makes it of special value in working with children.

4. It is equally efficient, is easier handled and less painful in the treatment of vascular nevi than carbon dioxide snow.

5. It is to be considered of value as a destructive agent in treating seborrhoic keratoses, lupus vulgaris, tuberculosis of the skin and small epitheliomas.

6. The cosmetic results following its use as a destructive agent are excellent.

405 Yeates Bldg.

ABSTRACT OF DISCUSSION

Dr. Henry H. Whitehouse, New York: I am glad indeed that Dr. Irvine has brought up this subject, and hope he will find some means of making up a technic that can be used. Our technic was crude at the time we used it, but the results were definite. I remember that Dr. Pusey commented on my paper entitled, "Liquid Air in Dermatology: Its Indications and Limitations," but that was prompted by what was going on in New York at that time. They had an institution where they were using this product on inoperable carcinoma and various other things. I soon felt that if an epithelioma was to be treated this was not the right treatment; however, in one case of basal cell epithelioma in a woman who was referred to me, the growth began on the cutaneous surface below the center of the lower lip. I referred her to a member of our society to see if this could not be checked by the roentgen ray, for the gentleman who referred her to me said her heart was in bad condition and that she could not take an anesthetic. She did not have glandular enlargement involvement, but subsequently developed a cauliflower growth involving the lip. In that case I soaked the growth thoroughly with liquid air. As I recall, it took eleven applications to get a result, but it was extremely good. In about eleven months a small nodule recurred but there was still no adenopathy, and I repeated the same method of treatment. That woman is now 94 or 95 years of age, and she looks as though she had had a burn on the lip. Dr. George T. Jackson agreed with me that in epithelioma the treatment was not indicated, but admitted that in a case of this type it would prove effective.

I do not think that it is as available for our use in New York as it may be with Dr. Irvine. It was manufactured then at Malden, Mass., and I had to send for bottles of it. As I recall, three bottles arrived twice a week, one for Dr. Lee DeForest, one for a professor who used it for show demonstration purposes and one for myself. I doubt whether it is manufactured anywhere in New York, but it is a therapeutic agent of great value.

Dr. Howard Fox, New York: I well remember the early work on liquid air, which was done by Dr. Dade in my father's service at the Vanderbilt Clinic. At that time we were all greatly impressed with the efficiency of this new agent, especially in the treatment of various nevi. However, as liquid air was not easily obtainable, the introduction by Dr. Pusey of carbon dioxide snow for freezing was welcome. It seems to me that unless it can be shown that liquid air is more effective than carbon dioxide snow, it should not replace the latter which is so easily obtained. I have recently used carbon dioxide snow in the cryocautery devised by Lortat-Jacob and have found it a convenient and satisfactory method of freezing.

Dr. William Allen Pusey, Chicago: I am glad Dr. Irvine recalled our attention to liquid air, and am prepared to believe that therapeutically it is at least as efficient as carbon dioxide snow. However, I do not imagine that there will be much difference in the therapeutic effects of the two agents. Carbon dioxide snow, when liquid, has a temperature of about 90 C. and liquid air a temperature of about 170 C. They are both sufficiently cold. One can hardly imagine a freezing that would be more destructive to cells than a 90 C. To my mind the absence of the necessity for using pressure with the liquid oxygen, that Dr. Irvine referred to, is not an advantage. As a matter of fact, it has always seemed to me that one of the chief advantages in the introduction of liquid oxygen and carbon dioxide snow was that we could freeze under pressure and get a relatively deep effect. In freezing with a spray, we simply get the surface and not the deep effect. There are two effects we want to get, the superficial and the deep. For the superficial we need simply contact, but for the deep effect it is desirable to use pressure. For example, take an angioma, which is one of the things best treated with carbon dioxide snow. A deep, inflammatory reaction in that tissue is desired, and in an angioma on the tip of the nose, such as I have recently treated, that effect is most quickly and evenly obtained by pressure. When I saw Dade treat one of his patients in New York—a demonstration which suggested carbon dioxide snow to me—it seemed to me more like branding. Perhaps we can do this more easily now than in those days.

As to the therapeutic indications, I have not used carbon dioxide snow in nearly so many things as many other men have. At present, I find it advantageous in some cases. I use it for treatment in some cases of senile keratosis, and in cases of senile freckles. I am impressed with its value in angiomas, not so much in the port wine marks, as in the more or less cavernous lesions. I have never thought it a good remedy for epithelioma, and have been surprised at how much it has been used.

I simply wish to call attention to the fact that we can get the same result from these two agents. I do not wish to throw any question on Dr. Irvine's results with liquid air, but for any method of treatment to convince me of its adequacy in warts, I want about 10,000 successful cases.

Dr. E. L. Oliver, Boston: I wish to ask about the exact technic in using this agent in the treatment of planter warts, for I see a good many cases of this sort.

Dr. Irvine: I agree with Dr. Pusey that one must treat a large number of warts to prove a cure, and for that reason I felt that this should be a preliminary report.

One of the differences, in my experience, between using liquid oxygen and carbon dioxide snow is the difference in pain resulting from the treatment. I have never been able to get away from pain with carbon dioxide snow. As to pressure, we can freeze sufficiently deep by applying liquid oxygen just on the top. It is much colder than Dr. Pusey stated, being at least 250 C., while carbon dioxide snow is about 89 C., and one can rapidly freeze a wart a quarter of an inch (6.35 mm.) high all the way through, by applying the liquid air to the top. With most warts, if we apply the liquid until it is frozen down to the skin, and then reapply it just enough to keep it frozen, and continue this for two to three minutes a good result will follow.

With plantar warts the technic is the same, the liquid should be kept on the wart itself and away from the skin. This suggestion for technic comes nearer a workable basis than anything we have had before, and to my mind the fact

that this can be done in most cases without pain, and that it can be used as easily as carbon dioxide snow makes it of value.

As to securing it, I have a list of some seventy-five cities in the country where it is available. Every plant that makes oxygen gas makes liquid oxygen. I am sure I can secure the names of the available firms for anyone who is interested. The man I have worked with assures me that they all use the same type of plant now, and that there is an amount of liquid oxygen available all the time the plant operates. A thermos bottle makes it available for practically three to four days.

THE USE OF PARATHYROID EXTRACT IN LICHEN URTICATUS*

THEODORE CORNBLEET, M.D.
CHICAGO

Lichen urticatus, a papular form of urticaria in children, is peculiarly resistant to all the methods of treatment usually advocated. As a result of clinical experience with the use of parathyroid extract (Collip[1]), I believe that an effective method has been found to alleviate this stubborn disease.

Lichen urticatus probably belongs in the group of sensitization dermatoses and is possibly fundamentally dependent on a positive and negative relationship of ion concentration. One of the elements in this ion interplay is calcium.

The use of calcium in the urticarial group of disorders has long been advocated, with conflicting opinions as to its results. It has been shown recently that the administration of a dose of from 5 to 10 grains (0.3 to 0.65 Gm.) of calcium lactate does not cause any appreciable increase in the calcium content of the blood, but that with massive doses of 1 or 2 drachms (3.9 or 7.8 Gm.) there is a considerable rise. This increase with massive doses may be reflected clinically in improvement in some of the patients with urticaria. In some of these persons, there is a high calcium content of the blood even before any administration of calcium, and in others there is improvement clinically with doses of calcium which of themselves are too small to raise appreciably the level of the calcium in the blood. Apparently, the mere level of calcium is not all important and other factors which are influenced by the ingestion of calcium are at work. It is possible, for instance, that a given effect depends on ionized or diffusible calcium and that large stores of undissociated calcium in themselves are ineffective.

With the development of the Collip extract of parathyroid, an effective method was made available for mobilizing calcium in the blood and for maintaining an increased level for relatively prolonged intervals. As to whether parathyroid extract has some other influence over the state of calcium, such as making the drug ionize more readily or influencing it in some other way, is not known.

Among the various sensitization dermatoses in which calcium and parathyroid extract have been used, lichen urticatus has been the first to show results sufficiently decisive to warrant recording. I have used

* Submitted for publication, July 17, 1928.

* From the Department of Dermatology, University of Illinois, service of Dr. F. E. Senear.

1. Para-Thor-Mone supplied by Lilly and Company.

parathyroid extract in twenty-one cases of lichen urticatus, and almost all of the patients improved. Those who did not improve were not under observation long enough to give the drug a fair trial. There have not been any untoward results from the use of the method in any of the patients on whom it was tried.

METHOD

Calcium lactate is given twice a day, the first dose an hour before breakfast and the second at bedtime. For a child, aged 5 years, a level teaspoonful is used. This is dissolved in half a glass of hot water, which cools almost as soon as the calcium goes into solution; lemon or orange juice may be added to make the medicine more palatable. Preparations of calcium which are less unpleasant to take have recently been placed on the market. For best results, calcium should be taken when the stomach is empty, as the excess of alkali in the small intestine during digestion precipitates the calcium in the form of the insoluble calcium carbonate, preventing absorption.

With the treatment with calcium, injections of the Collip hormone of parathyroid are given every other day. If possible, it is better to give smaller doses every day. For a child, aged 5, a safe daily dose is 5 minims (0.3 cc.), given subcutaneously, and for a child, aged 10, 8 minims (0.5 cc.) may be used. Overdosage of parathyroid may cause loss of appetite, lassitude, dulness, loss of initiative, somnolence, vomiting, mild or marked decreases in general body tone and impaired circulation. Still larger doses may result in more serious symptoms and even death. When large doses of parathyroid are used, it is necessary to control the treatment by laboratory estimations of the calcium content of the blood. Values higher than 12 mg. per hundred cubic centimeters of blood should be avoided. To obtain symptoms of overdosage, larger doses are usually necessary than the small ones here advocated.

In none of the patients in the entire series of those with lichen urticatus and other allied diseases who have been given parathyroid extract has there been any untoward result.

I did not use any local treatment, because I was anxious to make a proper appraisal of the effects of the combined treatment with calcium and parathyroid extract alone. With the use of the latter, itching is speedily relieved and there is a gradual improvement in the eruption; later the child's appearance becomes better generally so that local and other general measures are, strictly speaking, unnecessary, but may be used for more immediate results.

The following case reports are typical of the series.

REPORT OF CASES

Case 1.—P. P., a Jewish boy, aged 6 years, had been troubled for four years and presented a typical picture of lichen urticatus. He was treated with the usual local and general measures for two weeks with slight improvement. After this period, he was given, in addition, calcium lactate in half-teaspoonful doses, twice a day with increased improvement. The general improvement obtained after the use of the calcium was maintained, but the condition remained stationary and a good deal of the itching and eruption persisted after three months. At this time, he was given 5 minims (0.3 cc) of parathyroid extract (Collip), subcutaneously,

and a similar dose three days later. Four days later, the skin and general appearance were much better. The same dosage was continued at two-day intervals and after one more week the pruritus was gone and, except for pigmentation, scars and a dry, mild harshness to the touch, the skin was normal. The ingestion of calcium and injections of parathyroid extract were continued for two weeks more and then were stopped altogether. The following winter, when the child returned, he had pruritus hiemalis, which was promptly controlled with the administration of glycerin and olive oil locally and a reduction in the number of baths. At intervals, the patient comes in for observation, but he has not been troubled further by pruritus or the former eruption. His general anemic appearance has greatly improved, and his irritability has been markedly reduced.

CASE 2.—G. K., an Italian boy, aged 4 years, had a definite eruption of lichen urticatus with intensive itching, which had been present for a year and a half. He was given injections of parathyroid extract, 5 minims (0.3 cc.), three times a week. Itching ceased completely after ten days, and the active eruption disappeared completely in about a month. The child was seen six months later, and had remained well in the interim.

CASE 3.—A. M., an Irish girl, aged 7 years, had had lichen urticatus for four years. She was treated with parathyroid extract and calcium. Calcium lactate was given in half-teaspoonful doses an hour before breakfast and again at bed time; parathyroid extract was given subcutaneously in 7 minim (0.4 cc.) doses three times a week. The itching and active skin manifestations disappeared in two weeks. She was seen four months later, and her mother said that the child had not had any relapse.

Itching is generally completely relieved or greatly ameliorated about a week after the institution of injections of parathyroid extract, and the skin gradually takes on a better appearance. In some of my cases, the lesions disappeared only after six weeks of treatment. The combination of administration of calcium by mouth and injections of parathyroid extract subcutaneously gives quicker results than the injection of parathyroid extract alone. Administration of calcium alone clears up the eruption partially, but improvement then comes to a standstill.

I realize that lichen urticatus is a disease prone to disappear spontaneously at times, and also prone to recur. However, the prompt improvement that followed the injections of parathyroid extract in almost the entire series makes me feel that this agent influenced the result and that it was not merely incidental.

SUMMARY

1. The theoretical basis of calcium metabolism in this disorder is briefly discussed.

2. The method of the administration of calcium and parathyroid extract (Collip), as they have been employed with benefit in a series of twenty-one cases, is outlined.

3. Case reports are cited to reflect the general progress made under this regimen.

55 East Washington Street.
3215 North Avenue.

Editorial

GRANULOMAS FOR DIAGNOSIS

Castellani's report in the December issue of the ARCHIVES should serve as a stimulus in the investigation of a difficult class of dermatoses which is continually presenting itself and which frequently remains unsolved as to etiology. Clinically, his case was of the order of cases often presented "for diagnosis" before dermatologic societies in the form of subacute or chronic, more or less suppurative, deep-seated dermatoses in which it seems possible to eliminate, both clinically and by laboratory tests, tuberculosis, syphilis and fungus infection in causation. The tropical phagedenic ulcers might be added here. Fortunately, such additional circumstances as the distribution, clinical course and, to a limited but still frequently important extent, the laboratory examinations, remove deficiencies which clear up the entire matter; but only too often the dermatologist is reduced to the extreme of symptomatic diagnosis instead of the etiologic, which is the ideal.

It must be self-evident that the ways in which the skin reacts against noxae are comparatively limited; it cannot be expected that, with the multitudinous local and other irritants possible, there should be a specific and distinctive tissue reaction for each possible irritant. Skin reactions can be classified only into groups, and the different exciting noxae referred to this or that group. The situation is further complicated by the fact that the tissues of different subjects frequently react irregularly, and it thus comes about that it is no more than to be expected that so far as lesions alone are concerned, it is frequently impossible to make the etiologic diagnosis. Bacteriologic methods must be resorted to.

The particular need in connection with the "pseudomycotic" lesions, such as Castellani dealt with, is the realization that it is inane to think that the list of infectious granulomas as now known is complete or, worse yet, to take into consideration only tuberculosis, syphilis and fungus infection. Viewing the situation from the broad biologic angle, it is incomprehensible that medical science should already have catalogued all of the infectious or other agents that have the mild, long-continued irritant effects on human skin which lead to chronic granulomas. Now Castellani has added *Micrococcus myceticus* to the list of organisms which produce specific granulomas; he has refreshingly fulfilled the postulates of Koch—even in the human volunteer—and *M. myceticus* appears as a valid pathogen. This has been possible only because he branched out from the beaten path in employing creatinine

in his culture medium, and it is hoped that additional successes will be met in identifying the organism in this country by this simple expedient.

Incidentally, the creatinine flavor in the case is not entirely new, as Sabouraud employed urine in ringworm culture mediums many years ago; this, however, does not detract in the least from Castellani's success in capturing *M. myceticus*. To the curious, the employment of other nitrogenous substances, urinary or otherwise, is inviting for the purpose of incriminating bacteria other than *M. myceticus;* this would further reduce the number of these "cases for diagnosis." But in every such case the full complement of Koch's postulates must be fulfilled (for the skin, preferably on human volunteers), and a type culture be made available in some permanent depository; otherwise, there is the danger of such duplication of new species that they become meaningless.

CORRECTION

In the article by Dr. Fred D. Weidman and Dorothy Spring, "Comparison of Ringworm Culture Ingredients: II and III" (ARCH. DERMAT. & SYPH. **18**:829 [Dec.] 1928), the legends for figures 9 and 10 were transposed; that appearing under figure 9 should be under figure 10, and that under figure 10 should be under figure 9.

Abstracts from Current Literature

PAPILLEDEMA IN ACUTE LUETIC MENINGITIS AND MENINGOENCEPHALITIS. R. L. GLASS and P. H. GARVEY, Am. J. Ophth. **11**:377 (May) 1928.

Severe fundus lesions were present in each of the seven cases of acute syphilitic meningitis and meningo-encephalitis observed by the University of Michigan neurological service during a two year period. These fundus lesions varied from mild edema and neuroretinitis to severe choked disk. One case showed postneuritic optic atrophy. The ocular changes in the others cleared up completely under treatment. Three of these patients had been admitted to the hospital for operation. The importance of recognizing the occurrence of these changes in syphilis was stressed because of possible confusion with brain abscess and tumor, tuberculous meningitis, encephalitis and intracranial hemorrhage.

SPOROTRICHOSIS OF THE EYELID. B. Y. ALVIS, Am. J. Ophth. **11**:381 (May) 1928.

Cultures of *Sporothrix* were repeatedly obtained, and typical lesions were produced in white rats from the necrotic material of linear conjunctival excoriations. The condition was present on the eyelids of a patient who had been treated for eight years for trachoma. The clinical picture was that of a chronic inflammation of the conjunctivae of the eyelids, showing linear excoriations with moderately granular bases, covered by a grayish necrotic material and not characterized by bleeding or pain. This case occurred in St. Louis.

PRELIMINARY REPORT UPON EXPERIMENTAL INVESTIGATION AS TO PRESENCE OF SPIROCHAETAE PALLIDAE IN LUETIC INTERSTITIAL KERATITIS. C. A. CLAPP, Am. J. Ophth. **11**:527 (July) 1928.

These experiments, made on rabbits, showed that injections of spirochetes into the anterior chambers or ciliary region or subconjunctivally produced interstitial keratitis in six weeks.

TUBERCULOSIS OF THE CONJUNCTIVA. E. BARTOS and M. P. MOTTO, Am. J. Ophth. **11**:533 (July) 1928.

The article included a discussion and case report. The diagnosis was based on histologic and bacteriologic observations.

SOME OBSERVATIONS IN THE NATURE OF CANCER. M. SLYE, J. Cancer Research **11**:135 (July) 1927.

The conclusions drawn after eighteen years of investigation are that two factors, inherited susceptibility, and chronic irritation, stimulation or trauma, are necessary for the production of cancer. The observations made rule out contagion, the germ theory and the diet deficiency theory of the cause of cancer.

CANCER IS NOT A SIMPLE MENDELIAN RECESSIVE. C. C. LITTLE, J. Cancer Research **12**:30 (March) 1928.

A critical analysis is made of the work and publications of Slye in which the latter had drawn the hypothesis that all cancer is due to a simple mendelian recessive.

A COMPARISON OF THE QUANTITATIVE BIOLOGICAL EFFECT OF GAMMA AND X-RAYS. C. PACKARD, J. Cancer Research **12**:60 (March) 1928.

Experiments with gamma rays of radium emanation and with x-rays, using eggs of *Drosophila* as the medium, led to the assumption that equal intensities of the two types of radiation produce equal quantitative biologic effects.

THE RELATIONS OF HEREDITY TO CANCER. M. SLYE, J. Cancer Research **12**:83 (June) 1928.

The article consists of a reply to the communication of President Little of the University of Michigan.

CANCER IRRADIATION WITH CATHODE RAYS. M. F. GUYER and F. DANIELS, J. Cancer Research **12**:166 (June) 1928.

Experiments at the University of Wisconsin showed that the cathode rays of a Coolidge cathode ray tube, which correspond to the beta rays of radium, are destructive to cancer in rats. The action of the cathode rays appears to be superficial, effective action not being apparent beyond a depth of 0.5 cm. and effective screening being obtained with 1 mm. thickness of boiled ham. A single long exposure appeared more effective than the equivalent in small repeated doses, and of repeated doses the first seemed most beneficial.

MALIGNANT BLASTOMA. J. S. MCCARTNEY, JR., J. Cancer Research **12**:195 (Sept.) 1928.

The pathologic observations in two cases of malignant blastoma are reported from the Department of Pathology of the University of Minnesota Medical School. In one case sections of different organs showed a variable histologic structure corresponding in different areas to Hodgkin's disease, aleukemia, lymphosarcoma and endothelioma. The other showed only endothelioma of the lymph nodes. In both cases the clinical observations were similar.

THE NATURE OF CANCER SUSCEPTIBILITY IN HUMAN FAMILIES. A. S. WARTHIN, J. Cancer Research **12**:249 (Sept.) 1928.

Neoplasm susceptibility follows the laws of inheritance of other inheritable pathologic conditions. General constitutional predisposition and local tissue or organ predisposition are the chief genetic factors and point to dominance rather than to recessiveness.

H. R. FOERSTER.

THE ECZEMA-ASTHMA-PRURIGO-COMPLEX. R. CRANSTON LOW, Brit. J. Dermat. **40**:389 (Oct.) 1928.

Cranston Low discusses this subject in detail with numerous references to the literature. The subject is taken up under the following subheadings: prurigo and eczema; association of eczema and asthma; protein skin tests; heredity; blood changes in asthma; eczema, and prurigo; ichthyosis, eczema and asthma; and alternation of eczema and asthma. He comments on the lack of mention of the association of eczema and asthma in many of the modern textbooks on dermatology and asthma, and feels that the subject should be thoroughly discussed in the light of the modern conception of the two conditions and their association with anaphylaxis and sensitization. In a statistical study he found that in a considerable number of cases of chronic eczema there was a history of asthma and vice versa. The fact that both chronic eczemas and asthma give positive skin reactions to various proteins suggests that in cases of combined asthma and eczema the same protein is responsible for both conditions. The author cites a case in a girl, aged 9 years, with eczema and asthma in which both conditions were dependent on the ingestion of sugar. He states that the experience of those who have used protein skin tests in sensitization diseases is that the younger the patient the more frequently food proteins are responsible, while later in life, animal emanations, dust and bacterial antigens from focal infections play a larger part in the etiology. He comments on the relation to this group of dermatitis venenata or eczema due to an external cause from the contact with the skin of some substance to which the skin is sensitized, and states that the corresponding lesion in the respiratory tract is hay-fever.

He concludes with the statement that asthma-eczema and asthma, from their clinical course, symptoms, hereditary tendencies, skin tests and changes in the blood and other tissues, are analogous in every respect. This being so, the surprising thing is not that eczema and asthma may occur in the same patient, but that they are not more often associated.

THE ASTHMA-ECZEMA-PRURIGO COMPLEX. J. A. DRAKE, Brit. J. Dermat. **40**:407 (Oct.) 1928.

The subject is discussed in a general way, and Drake states that it is not unreasonable to put forth or support the hypothesis that the underlying or basic factor in the asthma-eczema-prurigo complex is an inherent, or possibly acquired, dysfunction or disharmony of the autonomic nervous system.

ON THE PSYCHIC AND NERVOUS COMPONENT OF THE SO-CALLED ALLERGIC SKIN-DISEASES AND THEIR TREATMENT. W. T. SACK, Brit. J. Dermat. **40**:442 (Nov.) 1928.

In examining the mental condition of all patients coming to him as a skin specialist, Sack was struck by the numerous connections between diseases of the skin (especially pruriginous ones) and mental and emotional irritation. In many cases he was able to succeed, by hypnotism alone, in causing pruritus, which had previously resisted all kinds of treatment, to disappear entirely. In speaking of allergy, Sack states that allergy imputes a complete change of the whole organism, and though fixed to and manifested in the special organ, it brings the question down to the problem of the whole constitution of the individual. He mentions the fact that recent publications seem to indicate that the similarity of certain allergic skin diseases may not be based on this quality alone but also on a specific alteration of the autonomic nervous system. In some cases the same symptoms as noted in allergic diseases are found and the slightest sign of allergy is not noted as, for instance, in cases in which the symptoms are produced by purely psychic factors. It is further an established fact that a correlation exists between the autonomic nervous system and the endocrines, and that malfunction of one cannot be present without disorderly action of the other. Working on this basis the author has been using in certain cases of eczema and neurodermatitis, a synthetic ephedrine, called ephetonin, with favorable results.

THE GOLD TREATMENT OF PSORIASIS. N. TOOMEY, Brit. J. Dermat. **40**:445 (Nov.) 1928.

Toomey presents the results of his experience with a preparation of metallic gold in the treatment of psoriasis. He first used a colloidal gold suspension, the Lange colloidal gold test reagent, giving it in doses of from 2 to 4 drachms (7.8 to 15.5 Gm.) three times daily. Later, to obtain larger gold dosage with less bulk of fluid, a preparation of gold containing 0.1 grain (0.006 Gm.) of metallic gold to every ten minims was used. This preparation was made from gold tribromide, by means of a bromine water process which is described in the article. He states that he has observed no immediate or late untoward effects from this treatment. No other therapy was prescribed while the patients were under this treatment. Toomey states that the effect of gold therapy in psoriasis is variable, but that not a single patient placed on the treatment failed to show some improvement. In the majority of the cases the therapy does not offer quick results, weeks and sometimes months of therapy being necessary to obtain complete clinical cure. In three cases clinically cured, over a year ago, there has been no evidence of return of the psoriasis. Cases of psoriasis of short duration and particularly those of the seborrheic type respond most quickly. The rationale of the therapy is obscure, and the treatment at the present time is purely empiric. Toomey concludes his article with the statement that metallic gold although efficacious in some cases of psoriasis, cannot at the present time be considered a sufficient remedy for all cases. He feels that in the early stage, or as a preliminary medicament, that it

is more efficient than arsenic, without the danger of intoxication and sequela, and that gold is the medicament of choice for initial internal therapy.

A Case of Linear Sclerosis Attributed to Infection with the Epidermophyton. D. E. H. Cleveland, Brit. J. Dermat. **40**:451 (Nov.) 1928.

A case is reported in a woman, aged 48, who presented a raised band of thickened skin encircling the left wrist. She complained of itching and burning sensations, and scaling of the skin of the left palm. The first signs appeared in the form of red and slightly elevated spots on the left palm twenty years previously. The present eruption on the wrist began six months before Cleveland saw her. Numerous mycelial threads resembling those of *Epidermophyton* were noted on examination of scales from the left palm and the interdigital spaces of the toes. Prolonged scratching and rubbing may bave been a factor in producing the plaque of lichenification or neurodermatitis.

Unilateral Cutis Verticis Gyrata (Sulcata) in an Acromegalic Man: Addendum to Dr. Parkes Weber's Paper on Cutis Verticis Gyrata. F. Parkes Weber and F. R. B. Atkinson, Brit. J. Dermat. **40**:454 (Nov.) 1928.

As an addendum to his paper presented in January, 1928, a case is reported in a man, aged 34, with acromegaly who presented an unilateral (right-sided) cutis verticis gyrata (sulcata). A photograph of the patient accompanies the article, as well as a discussion of the probable factors involved in the production of this abnormality.

Wien, Chicago.

Complement Fixation in Cutaneous Tuberculosis (Besredka's Method). Lortat-Jacob, Bidault, Legrain and Urban, Ann. de dermat. et syph. **9**:841 (Oct.) 1928.

On the assumption that light could be thrown on the question of the cutaneous tuberculoses and the tuberculids, the authors investigated a series of cases with the complement-fixation test. This test is of the same significance in tuberculosis of the skin as it is in visceral manifestations of the disease. It was found that the test was positive in about 90 per cent of the cases of tuberculids. For the authors, this group comprises papulonecrotic tuberculid, Bazin's disease, lupus erythematosus and lupus pernio. In frank tuberculosis cutaneous, the fixation test gave a smaller percentage of positive reactions than in the tuberculids and was more frequently positive in the ulcerative than in the nonulcerative forms. Of the doubtful tuberculids (granuloma annulare, pityriasis rubra pilaris, erythema nodosum, angiokeratoma, supramalleolar erythrocyanosis) the results obtained were indefinite, and no deductions could be drawn. But for lupus pernio and lupus erythematosus, the results obtained support the argument of the partisans of a tuberculous pathogenesis.

The large proportion of negative reactions in frank skin tuberculosis is discussed, and by the authors considered paradoxic; the result of an immunologic (allergic) play.

In a short appended note the authors mention favorable effects in cutaneous tuberculosis and in tuberculids with the methyl antigen of Boquet and Negre.

Contribution to the Abnormal Forms of Lichenification. E. Bizzozero, and F. Narducci, Ann. de dermat. et syph. **9**:857 (Oct.) 1928.

This article contains a discussion of the conception of Brocq and Pautrier on abnormal forms of pruritus with lichenification. The authors accept this enlarged point of view of that disorder and report two cases as additions of clinical interest to the conception. The first case showed a lichenified patch on the dorsum of the hands. This cutaneous transformation had been preceded by violent pruritus for some length of time. The authors enroll the case among the giant lichenifications, so far noted principally on the scrotum and upper inner thighs.

The second case showed large lichenified patches on the outer, upper legs. On the lichenified skin were numerous small conical nodules. The development of the skin manifestation was preceded by long continued itching of the area. The clinical picture had features suggestive of lichen ruber moniliformis and lichen obtusus, but the authors regarded it as an example of giant lichenification; basing their opinion partly on histologic study. Thus, they not only accept Brocq and Pautrier's conception but believe that it may be considerably enlarged.

THE TREATMENT OF CHANCROID BY ULTRAVIOLET LIGHT. V. SOUKHAREFF, Ann. de dermat. et syph. **9**:869 (Oct.) 1928.

Excellent therapeutic results in chancroid are reported from the employment of ultraviolet light. The author begins with a half erythema dose and gradually increases the intensity of the applications.

MEGACARYOCYTOMA OF THE RIGHT JAW. R. ARGAUD and L. CHATELLIER, Ann. de dermat. et syph. **9**:873 (Oct.) 1928.

Three cases of this rare growth are reported. A discussion of the cytology and function of megacaryocytes is included with the case reports.

SCHAMBERG'S DISEASE. I. M. SCHEVARZMANN, Ann. de dermat. et syph. **9**:884 (Oct.) 1928.

This article comprises a study of the literature and the record of the first case reported from Russia. The case was well studied and those interested are referred to the original report for details. Previous work on the origin of the pigment is confirmed. No definite vessel alteration was noted by either dermatoscopic or histologic study. The pigment has a tendency to accumulate about the sudoriparous elements.

CUTANEOUS ENDOCRINIDS (SCLERODERMA, EPIDERMOLYSIS BULLOSA) IN A PATIENT WITH MYXEDEMA. L. DRONET, Bull. Soc. franç. de dermat. et syph. **35**:503, 1928.

The author reports a case of generalized scleroderma and epidermolysis bullosa associated with myxedema. Thyroid medication produced decided improvement in both the skin and the systemic manifestations.

ASTHMA FROM HAY, WITH BUCCAL LESIONS AND ACID-BASE DISEQUILIBRIUM. DRUESNE and M. VERAIN, Bull. Soc. franç. de dermat. et syph. **35**:507, 1928.

The patient whose case is reported had asthma and buccal wheals. Acidosis was shown by augmentation of the blood p_H. Alkaline therapy proved beneficial.

INTRACRANIAL HYPERTENSION DURING THE COURSE OF A SECONDARY SYPHILITIC MENINGITIS. L. SPILLMAN and L. CORNIL, Bull. Soc. franç. de dermat. et syph. **35**:508, 1928.

A patient with secondary syphilis after a series of eight injections with neoarsphenamine developed neurorecurrence. Intracranial hypertension was demonstrated by lumbar puncture and by clinical signs. Benefit resulted from hypertonic injections of dextrose intravenously and mercury.

TWO FATALITIES FROM TREATMENT WITH ARSPHENAMINE. L. SPILLMAN, A. FRUHINSHOLZ and J. WATRIN, Bull. Soc. franç. de dermat. et syph. **35**:511, 1928.

The first patient died after the third injection of neoarsphenamine; the other after the first injection. Both patients showed symptoms of serous meningitis. The first patient, who had florid syphilis, may have developed a Herxheimer reaction. The second, however, had latent syphilis. These cases do not show the drug at fault; apparently, they were instances of extreme hypersensitivity.

A Case of Tubercular Leprosy in the Department of the Meurthe-et-Moselle. L. Spillman, Bull. Soc. franç. de dermat. et syph. **35**:515, 1928.

The occurrence of tubercular leprosy is reported in a Portugese who was a resident of France for five years.

Arsenic-Fast Syphilis. J. Watrin, Bull. Soc. franç. de dermat. et syph. **35**:519, 1928.

Attention is called to the apparent increase of arsenic-fast cases. Four cases are reported: two in the primary, and two in the secondary, stages of the disease. The preparation of arsphenamine used was of French manufacture.

Treatment of Urticaria and Allied Disorders with Cesium Eosinate. H. Gougerot, E. Peyre and F. Bertillon, Bull. Soc. franç. de dermat. et syph. **35**:530, 1928.

Eosinate of cesium which was found experimentally to possess anti-anaphylactic effects was used by the authors in certain cutaneous allergic diseases with encouraging results. From 10 to 15 cc. of a 10 per cent solution was given intravenously, daily or tri-weekly.

Telangiectases of the Feet and Legs in a Tabetic Patient. H. Gougerot, J. Meyer and P. Thiroloix, Bull. Soc. franç. de dermat. et syph. **35**:532, 1928.

Innumerable telangiectases on the legs of a patient were ascribed, with some reserve, to syphilis.

Generalized Zoster. Rabut and Chène, Bull. Soc. franç. de dermat. et syph. **35**:532, 1928.

A case of zoster is reported in which a generalized vesicular eruption appeared. The question whether such cases are coincidental zoster and varicella, or generalized instances of zoster is discussed. The authors consider their case one of true generalized zoster.

Hyperkeratotic Syphilids of the Legs with Papulotuberculous Syphilids of the Thighs. G. Milian and G. Garnier, Bull. Soc. franç. de dermat. et syph. **35**:535, 1928.

The patient presented a hyperkeratotic, vegetating eruption on nearly the entire surface of the right leg, papulotuberculous syphilids of the right thigh and numerous cicatrices.

Unusual Pruriginous Leprosy in a Patient with Malaria and Microfilariasis. E. Jeanselme and Horowitz, Bull. Soc. franç. de dermat. et syph. **35**:538, 1928.

The patient had maculo-anesthestic leprosy and a vesicobullous eruption that resembled scabies or Duhring's disease, but investigation ruled out these conditions. The serous exudate contained numerous globi. Microfilaria of Bancroft and plasmodia were found in the blood after a febrile attack.

Three Cases of Sporotrichosis Following Treatment with Arsenic. Jeanselme, Burnier and Horowitz, Bull. Soc. franç. de dermat. et syph. **35**:552, 1928.

These patients developed sporotrichal abscesses at the site of intragluteal injections of sulpharsphenamine. The authors previously reported sporotrichosis after intradermal tests, which they now believe to be due to an unrecognized sporotrichosis in another patient in the ward.

SECONDARY POSTSYPHILITIC MACULAR ATROPHY. BURNIER and ELIASCHEFF, Bull. Soc. franç. de dermat. et syph. **35**:556, 1928.

A patient who had a syphilitic roseola in 1919, now presented a typical secondary macular atrophy.

A CASE OF URTICARIA PIGMENTOSA. L. LORTAT-JACOB and T. BROSSE, Bull. Soc. franç. de dermat. et syph. **35**:560, 1928.

A typical case of this disorder in an infant, aged 1½ years, was presented. In discussing this case, Cailliau stated that his histologic investigation led him to regard urticaria pigmentosa as the result of a local hematopoiesis, which allied it with the lymphoblastomas.

MULTIPLE VERRUCOUS AND HYPERKERATOTIC NEVI. L. LORTAT-JACOB and T. BROSSE, Bull. Soc. franç. de dermat. et syph. **35**:562, 1928.

The patient presented an unusual clinical picture, the lesions being distributed in a zoniform manner.

A CASE OF SODOKU. L. LORTAT-JACOB and P. LEGRAIN, Bull. Soc. franç. de dermat. et syph. **35**:563, 1928.

The patient presented the initial lesion of Sodoku and disseminated erythematous macules. The first manifestation appeared thirteen days after the patient was bitten by a rat. The diagnosis was verified by inoculation of blood into mice. A rapid cure was obtained with neoarsphenamine.

EXTENSIVE LUPUS OF THE CHEEKS BENEFITED BY A GOLD SALT. M. PINARD, P. VERNIER and VERSINI, Bull. Soc. franç. de dermat. et syph. **35**:565, 1928.

In a case observed from infancy, decided improvement followed the use of a gold compound. The condition appears to have been lupus erythematosus rather than lupus vulgaris.

FAVUS OF THE LID AND SCALP IN AN INFANT SIXTEEN DAYS OLD. J. PAYENNEVILLE and J. MARIE, Bull. Soc. franç. de dermat. et syph. **35**:567, 1928.

A case which was clinically typical and verified by laboratory procedures was reported because it represented the earliest reported instance of favus infection; namely, on the fourth day of life. The history was obtained from the family. The authors did not see the patient until she was 16 days old.

RESULTS OF THE WASSERMANN TEST IN PROSTITUTES. L. BIZARD, Bull. Soc. franç. d dermat. et syph. **35**:574, 1928.

The author gives the results of a systematic examination of prostitutes with the Wassermann test for the purpose of showing the frequency of the disease in that class. Of 1,445 persons examined, 375, or about 25 per cent, gave positive results; these figures comprise those who were both confirmed and occasional prostitutes. In a separate series of 432 registered prostitutes, 324, or 75 per cent, gave positive reactions. The author says that about 10 per cent were syphilitic without knowing it; that is, a history of an initial lesion or other manifestations of the disease could not be obtained.

THE MEINICKE REACTION: ITS PLACE AMONG OTHER SEROLOGIC TESTS FOR SYPHILIS, AND DISCORDANT RESULTS. R. DEMANCHE and L. GUENOT, Bull. Soc. franç. de dermat. et syph. **35**:578, 1928.

A study of a moderately large series of Meinicke tests and comparison with five other serologic procedures for syphilis led the authors to the following conclusions: First, the advantages of the Meinicke test should give it an important place among similar tests. Second, discordant results are not entirely due to

faulty technical methods or inherent weaknesses in the test, but depend on intrinsic differences in the serum examined. Third, when discrepant results appear, their interpretation requires the weighing of all available information before a decision is made.

EXPERIMENTAL STUDY OF A LIPOSOLUBLE BISMUTH COMPOUND. C. LEVADITI, V. SANCHIS-BAYARRI, R. SCHOEN and Y. MANNIN, Bull. Soc. franç. de dermat. et syph. **35**:587, 1928.

The authors studied the effects of iodo-bismuth tricetylamin, a liposoluble bismuth compound, on rabbits. They found that therapeutically this substance was unusually effective. The curative effect was obtained with from 1 to 2 mg. per kilogram of body weight. They state that this liposoluble compound is quickly absorbed like the water soluble salts and that it is equal to them in treponemicidal activity, while possessing the depot-like quality of the insoluble compounds.

THE TREATMENT OF SYPHILIS WITH LIPOSOLUBLE BISMUTH COMPOUNDS. L. FOURNIER, L. GUENOT, A. SCHWARTZ and YOVANOWITCH, Bull. Soc. franç. de dermat. et syph. **35**:602, 1928.

In their clinical investigation, the authors used several liposoluble bismuth compounds, treating about 200 patients. They found the liposoluble compounds superior to bismuth suspensions, in the effect on both the clinical and the serologic manifestations of syphilis.

PRODUCTION OF MICROBIC ACTIVITY BY ROENTGEN RAYS. G. MILIAN and L. LAUNOY, Bull. Soc. franç. de dermat. et syph. **35**:611, 1928.

A case is cited in which filtered roentgen rays were applied to the pharyngeal region for the relief from enlarged tonsils and lymph glands involved in a generalized mycosis fungoides. The patient developed furuncles which were attributed to a stimulation of microbic activity by the roentgen rays. They saw this "biotropic" effect in other cases.

INTRADERMAL REACTIONS TO STREPTOCOCCUS AND STAPHYLOCOCCUS VACCINES IN ECZEMATIFORM MICROBIC DERMATITIS. HUDELO, CHÈNE and SIGWALD, Bull. Soc. franç. de dermat. et syph. **35**:613, 1928.

In this country, the disease which the authors studied is designated as infectious eczematoid dermatitis. Seventeen cases in a series gave positive reactions to staphylococcus and streptococcus vaccines containing a few million organisms per cubic centimeter. A control group of cases gave fairly constant negative results. The reaction appears to be of diagnostic value in questionable cases.

COPPER IN DERMATOLOGY. E. DOUMER, Bull. Soc. franç. de dermat. et syph. **35**:619, 1928.

Mention is made of a tentative therapeutic trial of certain copper compounds such as oleates and stearates, all soluble in fat. In tinea versicolor the fungicidal activity of copper oleate was noted.

CUTANEOUS ASPERGILLOSIS AND SPLENOMYCOSIS. A. NANTA and L. CHATELLIER, Bull. Soc. franç. de dermat. et syph. **35**:621, 1928.

As part of a study of cutaneous aspergillosis, the authors investigated the production of visceral lesions by intravenous injections of the spores of *Aspergillus Nantae* in rabbits and guinea-pigs. In the spleen of these animals were found abscesses or granulomatous foci, from which the organism was recovered.

CHEILITIS DUE TO ROUGE. C. AUDRY and VALDIGUIE, Bull. Soc. franç. de dermat. et syph. **35**:623, 1928.

An exudative cheilitis due to lipstick was reported. The particular substance in the rouge which produced the disturbance was not detected.

TREATMENT OF PSORIASIS WITH A COMPOUND OF BISMUTH, ARSENIC AND PYRIDINE. BURNIER and LOTTE, Bull. Soc. franç. de dermat. et syph. **35**:624, 1928.

This preparation is a compound of bismuth, arsenic and pyridine. Favorable reports of its effects in psoriasis had been reported. The authors used it in treating seventy-two patients with psoriasis. They achieved some success with the preparation, especially in so-called "arthropathic psoriasis."

REMARKS ON THE TREATMENT OF ALOPECIA AREATA WITH ULTRAVIOLET LIGHT. BIZARD and MARCERON, Bull. Soc. franç. de dermat. et syph. **35**:627, 1928.

After experience with fifty-nine cases, the authors concluded that ultraviolet light was the best treatment for alopecia areata.

LUPUS VERRUCOSUS OF THE FACE AND EXTREMITIES CURED BY SODIUM AUROTHIOSULPHATE. E. RAMEL, Bull. Soc. franç. de dermat. et syph. **35**:630, 1928.

Disseminated lesions of lupus verrucosus appeared in a girl, aged 17 years. The skin manifestations were undoubtedly of hematogenous origin (bacillemia) from a latent pulmonary focus aroused by a bronchitis.

MICHAEL, Houston, Texas.

SUPERINFECTION IN SYPHILIS. M. TRUFFI, Gior. ital. di dermat. e sifil. **69**:372 (June) 1928.

According to the author, syphilitic superinfection is possible in man. Immunity in syphilis is not absolute. Superinfection is frequent during the incubation period of the disease, it is less frequent during the secondary period, and it is again possible in the tertiary stage. It is rare in syphilis of the nervous system, tabes and general paralysis. The local manifestations in a case of superinfection are of the same type of those present in the individual. It is possible to recover living spirochetes from the local lesions of superinfection; therefore these lesions cannot be regarded solely as allergic manifestations. It has not been proved that these spirochetes are capable of traversing the cutaneous tissues and invading the system, but the author presumes that it is likely to occur. In rabbits superinfection is possible with its own virus in the first few months of the infection only, but can always be obtained with heterogenous virus.

EXPERIMENTAL SYPHILITIC SUPERINFECTION IN ANIMALS. G. ARMUZZI, Gior. ital. di dermat. e sifil. **69**:381 (June) 1928.

The author writes a complete and erudite paper of more than sixty pages, and concludes that rabbits once infected with syphilis remain syphilitic for life. There is no spontaneous recovery. Cutaneous reinfection is possible except on the location of the primary lesion, which seems locally anallergic. Animals treated with arsphenamine are readily cured and reinfection is always possible. Bismuth and mercury seem only to protect the animal, producing a sort of latency during which superinfection is possible.

EXPERIMENTAL SYPHILITIC SUPERINFECTION IN MAN. E. BALBI, Gior. ital. di dermat. e sifil. **69**:447 (June) 1928.

Balbi defines superinfection as "a second treponema infection superposed to a first still present and active in the human organism." He states that during the period of first incubation, superinfection is easily obtained in the form of an initial sore, with its corresponding enlarged glands. After the appearance of the chancre, superinfection is still frequent but less so as the secondary stage is approached. During the secondary stage of the disease, superinfection may be

attained in from 50 to 70 per cent of cases, in the form of papules in which living spirochetes are demonstrable. In late syphilis a local reaction may be obtained, and in this case the local lesions are of the gummatous type. Generalized superinfection is exceptional in late syphilis. In nervous syphilis, superinfection is difficult to obtain. In people with inherited syphilis, superinfection is also possible with the same characters described in acquired syphilis.

BASAL METABOLISM IN DERMATOLOGY. G. FALCHI, Gior. ital. di dermat. e sifil. **69**:671 (June) 1928.

The author has investigated the basal metabolism in sixty-three patients suffering from skin conditions. The results are not uniform. In patients suffering from the same condition the basal metabolism has been found to be increased in some, normal in others and still low in many. The author concludes that determinations on the basal metabolism are of doubtful value in the diagnosis or prognosis of diseases of the skin.

BISMUTH IN CEREBROSPINAL FLUID. M. FRAULINI, Gior. ital. dermat. e sifil. **69**:785 (June) 1928.

The author has found bismuth in the spinal fluid of all cases of general paralysis in which the patients were treated with intramuscular injections of a bismuth salt, containing an equivalent of 20 per cent of metallic bismuth.

AUROTHERAPY OF CUTANEOUS TUBERCULOSIS, OF LEPROSY AND OF PSORIASIS. G. JAJA, Gior. ital. di dermat. e sifil. **69**:846 (June) 1928.

The author reports the clinical results obtained with the use of gold salts in the treatment of forty-eight patients with lupus erythematosus, forty with tuberculosis nodularis of the skin, five with psoriasis and five with leprosy.

The efficacy of the gold salts depends, according to the author, on the chemical action of the same, and not on the amount injected. Gold thiosulphate is particularly successful in cases of lupus erythematosus. The association of gold thiosulphate and arsphenamine does not seem to the author particularly useful. Treatment with gold thiosulphate has been successful in 90 per cent of the cases of lupus erythematosus and in 40 per cent of the cases of tuberculosis nodularis cutis.

EXPERIMENTAL INVESTIGATIONS ON THE TOXIC ACTION OF THALLIUM. V. LEIGHEB, Gior. ital. di dermat. e sifil. **69**:960 (June) 1928.

According to the author's experiments, thallium is an extremely powerful poison which causes profound alterations on all the organs, including those of the nervous system. The alterations found on the endocrine glands are sufficiently marked to warrant the opinion that the alopecic properties of thallium depend on the action of this drug on the ductless glands. Of these glands, the thyroid seems to be the more affected.

TELLURIUM IN THE TREATMENT OF SYPHILIS. A. VERSARI, Rif. Med. **44**:1137 (Sept.) 1928.

A suspension of tellurium in 10 per cent dextrose solution, biniodide of tellurium and iodotellurate of quinine were used and found useful in the treatment of syphilis. The injection of these preparations is followed by a rapid disappearance of the spirochete from the chancre and from the secondary lesions of the skin and mucous membranes. Serologic reactions are not easily influenced or changed by tellurium therapy. The kidneys are not affected by injections of the mentioned salts. The most important drawbacks reported are the intense pain at the site of the injections, the loss of weight during the treatment and the alliaceous odor of the breath.

V. PARDO-CASTELLO, Havana.

DERMATOLOGIC ABSTRACTS

The Journal of the American Medical Association

Melanoma (Melanotic Sarcoma) of Ovary with Diffuse Discoloration of Skin. J. R. Miller, New England J. Med. **199**:830 (Nov. 1) 1928.

Miller reports a case of melanoma involving the ovaries and suprarenals which is thought to have been primary in a pigmented mole. This patient presented an unusual feature which has not been referred to heretofore in the literature; namely, a uniform discoloration of the skin of the entire body. It is thought that this was due to the presence of a soluble melanin in the blood stream, though the influence of involvement of the suprarenals cannot be disregarded, especially as there was no record of blood pressure or blood sugar examinations.

Tumors of Skin and Mammary Gland Caused by Pyrogenous Products of Cholesterol. E. L. Kennaway and B. Sampson, J. Path. & Bact. **31**:609 (Oct.) 1928.

Products obtained by Kennaway and Sampson by heating cholesterol to about 800 C. caused epithelioma of the skin in mice and a duct papilloma of the mammary gland in a rabbit.

Acute Leukemia with Aplastic Anemia and Skin Nodule of Lymphatic Tissue in Skin. Dumitresco-Mante, Arch. d. mal. du coeur. **21**:593 (Sept.) 1928.

Dumitresco-Mante reports a case of acute lymphocytic leukemia (149,800 leukocytes per cubic millimeter) and aplastic anemia (1,800,000 erythrocytes) in a patient who presented a necrotic skin nodule which was found on microscopic examination to be leukemic.

Arterial Sympathectomy in Disturbances Following Freezing. Voncken, Bull. et mém. Soc. nat. de chir. **54**:1182 (Nov. 17) 1928.

Voncken describes the case of a man who froze both his feet during the war and as a result lost all his toes. In 1923, the author performed, under local anesthesia, a periarterial sympathectomy on the right femoral artery at the level of the apex of Scarpa's triangle, for two large, painful discharging ulcers of the right foot, one extending along the entire outer edge of the foot and the other located on the amputation stumps of the first and second toes. In a few days the ulcerations had completely healed. Examination of the patient four years later showed that the scars of the ulcerations had not broken down; the patient stated that although he experienced intermittent pain in the amputation stumps on the left foot he had no pain in the amputation stumps on the right foot.

Suprarenalectomy in Gangrene of Extremities. Leriche, Bull. et mém. Soc. nat. de chir. **54**:1201 (Nov. 17) 1928.

Leriche does not believe that periarterial sympathectomy is of value in thromboangiitis obliterans, because in nearly all cases of this condition the peripheral arterioles are already in a state of habitual dilatation as the result of a simple functional adaptation. By means of suprarenalectomy, however, one may arrest the evolution of the disease and suppress at once the pain and the trophic phenomena. The author has for a long time, however, considered that suprarenalectomy is too radical an operation, and he has attempted to produce an atrophy of the chromaffin tissue only, by dividing the nerves supplying the glands; up to the present, he has not succeeded in isolating these nerves. He also tried twice to cut out only the medullary portion but did not succeed in doing so on account of the great fragility of the gland. The author believes that in spite of its short-

comings the operation of suprarenalectomy is still indicated in some cases of thrombo-angiitis obliterans and should not be discarded prematurely.

BURNING SENSATION IN TONGUE CAUSED BY HYPERACIDITY. J. SELLEI, Deutsche med. Wchnschr. **54**:1758 (Oct. 19) 1928.

Chemical examination of the saliva in patients with a sensation of burning in the tongue yielded normal results. The idea that the trouble might be caused by sharp teeth or the material used in dental work was entertained, but dismissed after investigation. On the other hand, most of the patients were found to have slight hyperacidity; anacidity was found only occasionally. When the latter observation is made, pernicious anemia should be suspected. In all cases of burning in the tongue, the gastric juice and the blood should be examined. A search for tapeworm should also be made.

INTENSIVE ULTRAVIOLET IRRADIATION OF LUPUS VULGARIS. W. JADASSOHN, Klin. Wchnschr. **7**:1907 (Sept. 30) 1928.

Jadassohn's method consists in the application of very large doses of rays, repeated before the disappearance of the reaction (vesicle and crust formation). The dose for the later irradiations is in most cases increased. The reactions are allowed to develop without any antiphlogistic measures. The crusts and coverings of the vesicles are removed with ointment or pincers before the following irradiation. The ulcerations have always healed well in his experience. The treatment is not painless but has given good results in cases resistant to other methods. Twenty patients have been treated by this method in the last two years and persons who had been excluded by their appearance from social life or gainful occupations have been restored to normal life. He considers it too early to speak of the permanence of the cures.

TREATMENT OF SKIN DISEASES WITHOUT GAUZE DRESSINGS. A. STRAUSS, Med. klin. **24**:1512 (Sept. 28) 1928.

For a covering to the skin to avoid the necessity of gauze dressings, Strauss uses liquid petrolatum 4 parts, glycerin 8 parts, starch, zinc oxide and distilled water 100 parts each. To this formula, as a base, he makes additions to suit the individual case. The consistency is that of ointment, and it has the advantage that it does not become brittle after it has been on the skin for a while. As a water-soluble skin varnish he recommends: tragacanth 3 parts, zinc oxide 10 parts, an ointment base composed of the oxycholesterol of anhydrous wool fat and paraffin 100 parts, and distilled water 100 parts. When well rubbed in, this gives a smooth, elastic, scarcely visible covering. Small quantities of eosin and sulphonated bitumen may be added to tint the mixture for cosmetic purposes. If a cooling action is desired, a 2 per cent solution of aluminum acetate may be used instead of water in either of these formulas. For deeper action the following basic formula may be used: starch 10 parts, zinc oxide 5 parts, beeswax 1 part, the ointment base mentioned in the first formula 40 parts, and distilled water (or 2 per cent solution of aluminum acetate) 100 parts. This is an excellent preventive against tissue eczema and similar conditions.

CAN SYPHILIS BE TRANSMITTED BY LIP-STICKS? A. BUSCHKE and A. JOSEPH, Med. Welt **2**:1417 (Sept. 22) 1928.

A typical chancre appeared on the upper lip of a girl who five weeks before had borrowed a lip-stick from a friend. To find out whether or not infection from lip-sticks is possible, Buschke and Joseph put some chancre serum on one and kept it at room temperature; moistening it with physiologic solution of sodium chloride after twenty-four hours, he found the spirochetes motionless. Cultures of spirochetes dried for two hours still showed motile spirochetes. The spirochetes on lip-sticks are protected from the harmful effect of light. There

is a possibility of infection, since the mucous membrane of the lip may have erosions into which inoculation with the spirochetes may take place.

SPONTANEOUS GANGRENE OF THE EXTREMITIES IN THE YOUNG. M. GRASMANN, München. med. Wchnschr. **75**:1679 (Sept. 28) 1928.

The patient in Grasmann's case was a man, aged 34. There were definite evidences of constitutional disturbances in the endocrine system, of a vasoneurotic tendency and of hypoplasia of the arteries of the lower extremities. He had had syphilis, for which he had been thoroughly treated, with resultant negative Wassermann reaction for several years past. He had also had typhoid, and on two occasions, eighteen months and one month, respectively, before the onset of the attacks under consideration, he had had pains in the upper abdominal region which had raised the suspicion of gastric ulcer or aortalgia. Severe pains leading to collapse occurred suddenly in the left leg in October (beginning of cold weather). The entire left leg as far as the knee was perfectly white, cold and without sensation or pulse. The condition improved slowly under treatment, but recurred twice within sixteen days, the second time with gangrene of the toes which extended over the foot and part of the leg, necessitating amputation. The large vessels did not bleed; they were greatly contracted and without visible thrombosis. During convalescence the abdominal crises mentioned occurred several times, very suddenly and with severe shock. The following autumn the patient had several attacks of pain in the left hand, accompanied by loss of sensation and of pulse and by whiteness of the skin. The next year, again at the beginning of the cold weather, local syncope of the right leg occurred, rapidly followed by gangrene. The right leg was amputated. The caliber of the arteries was remarkably small and there was a stenosing process of the right popliteal artery. Five months later the patient died of pneumonia. Necropsy was not permitted. Since the arteries in the leg first amputated were macroscopically and microscopically intact, Grasmann assumes that the factors of greatest importance in the origin of the gangrene were functional.

PECULIAR SKIN REACTION CAUSED BY BLOOD. R. RÖSSLE, München. med. Wchnschr. **75**:1789 (Oct. 19) 1928.

For a number of years Rössle observed at necropsies that the contact of cadaver blood with the skin of the flexor service of his forearm caused red spots to appear in from twenty to thirty minutes. These spots disappear in from one half to three quarters of an hour. The degree of the reaction varies with the amount of blood; the contact of a large quantity of blood leaves a red ring surrounding a white blanched center. This phenomenon may sometimes be produced even with blood from living and closely related persons. Its cause is not only mechanical but also chemical: substances quickly produced during the escape of the blood irritate the skin.

MILIARY TUBERCULOSIS OF THE SKIN. E. J. MEIJERS, Nederl. Maandschr. v. Geneesk. **15**:346, 1928.

A child, aged 2, was brought to the clinic with symptoms of meningitis. The father had died of open tuberculosis a short time before. Over the entire skin of the face and of the extremities were strewn round papules, the size of a pinhead. Most of these were crusted over at the center, but in a few cases a vesicle was still visible. The efflorescences bore a striking resemblance to papulonecrotic tuberculids; they were not hemorrhagic. According to the mother, they had been present for about four weeks. On roentgen examination the lungs presented the typical picture of miliary tuberculosis; no tubercles could be discovered in the base of the lungs. The general condition of the child grew rapidly worse, although the tuberculids showed a tendency to heal and new eruptions did not occur. At necropsy a piece of skin, which, however, did not include the most distinct changes, was removed for examination. Under the epithelium, in the cutis, a few giant cells were found. Tubercle bacilli were not seen.

Society Transactions

MANHATTAN DERMATOLOGICAL SOCIETY

Regular Meeting, May 8, 1928

LUDWIG OULLMANN, M.D., *in the Chair*

CASE FOR DIAGNOSIS (SYPHILIS). Presented by DR. WEISS.

A woman, aged 35 years, had had a maculopapular eruption which had started on the front hairline, and extended in semicircular patches over the forehead and cheeks to the neck. The duration of the condition was eight weeks. The blood and cerebrospinal fluid gave negative reactions.

DISCUSSION

DR. WALLHAUSER: Taking into consideration the circinate configuration of the lesions in which nodules were present, the diagnosis of syphilis is suggested.

DR. GILMOUR: I believe that it is syphilis because the lesions are papular and are arranged in segments of circles.

DR. ELLER: I think that the patient has a secondary serpiginous syphilitic eruption.

DR. MACKEE: I agree with the diagnosis of late secondary or early tertiary syphilis.

DR. ROSEN: My diagnosis is late secondary syphilis. The patient probably had a primary lesion within the past two years. Both sides of the face and neck were involved with papulosquamous lesions arranged in groups. There was neither scarring nor atrophy. I feel that a Wassermann reaction obtained at the time would have been positive. In fact, the patient said that the Wassermann reaction of the blood was reported positive some time ago at the Post-Graduate Medical School and Hospital.

DR. PAROUNAGIAN: I regard this as a tertiary rather than late secondary syphilis, and instead of making further serologic examinations, I think a therapeutic test and a provocative Wassermann test should be made.

DR. WEISS: I shall carry out a therapeutic test.

CARCINOMA OF THE TONGUE. Presented by DR. ELLER.

A man, aged 40, from the Skin Clinic of the Post-Graduate School was presented to show the result of treatment. Twenty years previously he had a condition which was diagnosed as syphilis. The patient was treated by intramuscular injections, but was not given any further treatment until eleven months before presentation. At that time he consulted a physician for a growth of two months' duration on the left side of the tongue. A positive Wassermann reaction was obtained. Fifteen intravenous treatments were given in spite of the fact that the lesion continued to grow larger.

When first seen, five months prior to presentation, the patient had an infiltrated cauliflower-like growth on the left side of the tongue, about the size of a quarter and 1 inch (2.54 cm.) from the tip. This was diagnosed clinically a prickle cell epithelioma. Adenopathy was not present. The growth was removed under local anesthesia by surgical diathermy. Six days later, platinum radium seeds were buried in the tongue about the site of the removed lesion, at the base of the tongue, in the floor of the mouth and in the submaxillary and submental regions.

A microscopic examination confirmed the diagnosis of prickle cell epithelioma. The patient gained 30 pounds (13.6 Kg.) in weight in four months and at the time of presentation was receiving bismuth injections for his syphilitic infection.

DISCUSSION

DR. OULLMANN: This case reminded me of one which I presented a few months before. The patient received radium treatment after operation and was free from symptoms for nine years. He then developed cancer of the gums and the jawbone.

LICHEN PLANUS (?). Presented by DR. OULLMANN.

A woman, aged 30, was seen for the first time six months prior to presentation when she had shown lesions in the mouth. On the inner sides of the cheeks there were yellowish nodules as well as larger plaques, which were eroded in places. Later, the patient developed a typical lichen planus of the body including the wrists. When healed, the area showed pigmentation. About ten weeks before presentation an eruption of umbilicated papules developed on the palms. These papules, which were shiny and keratotic, became vesicular in time. The vesicles being deep seated, the condition resembled a vesicular dermatitis.

DISCUSSION

DR. WALLHAUSER: I incline to the belief that several conditions are present in this case. I would regard the lesions in the mouth, which consist of small, superficial ulcerations with outlying erythema, as Vincents' angina; the vesicular lesions in the palms as dermatophytosis, and the generalized eruption as lichen planus.

DR. GILMOUR: I should call the condition dermatophytosis.

DR. MACKEE: I do not think it is lichen planus of the palms. The palmar lesions of lichen planus often resemble vesicles, but, of course, they are papules and usually large. The lesions in this case are small, deep seated and close together. I consider it a case of dermatophytosis or dermatitis venanata; although I cannot differentiate between the two clinically, I prefer the diagnosis of dermatophytosis. As far as the lesions in the mouth and on the body are concerned, I accept tentatively the diagnosis of lichen planus.

DR. WEISS: I found typical lichen planus papules on the thumb. I believe the condition to be lichen planus.

DR. PAROUNAGIAN: I agree with the diagnosis of lichen planus.

SYPHILIS (CONGENITAL). Presented by DR. PAROUNAGIAN.

A boy, aged 9, had never had clinical syphilis but he gave a Wassermann reaction of four plus. The entire family including the father, mother, two brothers and a sister, gave positive Wassermann reactions. The only visible manifestations of syphilis in the patient were well marked tubercles on both molars, a high arch and an irregular and imperfect anterior hairline.

DISCUSSION

DR. OCHS: The tubercles are not characteristic of syphilis.

DR. MACKEE: This subject has all been thrashed out before. These cases are always interesting to see. I hope Dr. Parounagian will continue to show them. He always selects patients however, with a syphilitic history. It is a rather common anomaly. I think at least the consensus is that this malformation of the teeth is not characteristic of syphilis nor can it be accepted as a stigma of syphilis. The opinion of the minority is that it is a stigma of syphilis. The

fact that it is associated sometimes with high palatal arch and other malformations is of doubtful significance, and does not warrant the belief that it is of syphilitic origin.

DR. WISE: I would suggest that all of our patients be examined for the tubercle of Carabelli. It is the only way we can get a true idea of the significance of that anomaly of dental development.

DR. PAROUNAGIAN: I think that the members of this society know my views about this subject. From my experience and observation, I am convinced that the tubercle of Carabelli is a sign of congenital syphilis. I have presented a number of patients here with parents who likewise present the anomaly.

RECURRENT ERYTHEMA MULTIFORME. Presented by DR. WEISS.

A man, aged 50, had had a seasonal eruption for twenty years. It occurred yearly, in the spring and autumn, on the dorsal surfaces of the wrists and hands, and lateraly on the nape of the neck and on the buttocks. On the neck there was a confluent papular eruption. The lesions were purplish and showed some umbilications. The attacks were accompanied by general malaise. The etiology could not be ascertained. It was thought to be most probably a vasomotor disturbance of toxic origin. In addition to the eruption on the neck there were patches of scaly erythema on the forearms.

DISCUSSION

DR. MACKEE: I suggest the possibility of recurrent attacks of lupus erythematosus precipitated by exposure to the sun. The possibility of a drug eruption should also be considered.

DR. PAROUNAGIAN: The back of the neck is not the usual site for lupus erythematosus.

LUPUS VULGARIS DISSEMINATUS. Presented by DR. ELLER.

A man, aged 49, from the Skin Clinic of the Post-Graduate Medical School had been presented by Dr. Wise at the April meeting of the New York Dermatological Society.

DISCUSSION

DR. OCHS: I could not have made the clinical diagnosis.

DR. MACKEE: A diagnosis of bromoderma or iododerma has been made in two patients in the clinic during the last few years. Both cases were similar to this. Both were found to be the miliary type of tuberculosis of the skin. When the lesions first begin, they are active, often necrotic and pustular and resemble an iodide eruption. The fact that two of these cases have been observed leads to a little more care in making a diagnosis.

DR. WISE: I wonder if any one has had any result in treating patients with this type of tuberculosis cutis with a gold preparation.

DR. MACKEE: In pulmonary tuberculosis, the German school is experimenting with salt-free diet and high vitamin diet. Good results are claimed. I believe that they have also tried this diet successfully in cases of lupus vulgaris and other forms of tuberculosis of the skin. It might be well for all of us to try salt-free high vitamin diet in tuberculosis of the skin and later compare our experience. These cases are likely to be associated with remissions and exacerbations.

ARSPHENAMINE DERMATITIS (?). Presented by DR. OCHS.

A man, aged 36 years, developed arsphenamine dermatitis of the generalized exfoliating type after five injections. He was treated with sodium thiosulphate and almost recovered. The skin was erythematous. There were patches of slight exfoliation.

ARSPHENAMINE DERMATITIS. Presented by DR. PAROUNAGIAN.

A policeman, aged 46, was given three intravenous injections of neoarsphenamine. The patient stated that two hours after the last injection on May 3, dermatitis appeared. The dermatitis was rather generalized and consisted mostly of papules and macules, interspersed with small pustules. Itching had not been troublesome. There was slight configuration.

DISCUSSION

DR. WISE: I think that this condition is pityriasis rosea.

DR. ROSEN: I agree with Dr. Wise. The occurrence of this type of eruption two hours after an injection of arsphenamine is extremely unusual.

DR. MACKEE: I agree with the other speakers. The eruption began as an acute macular exanthem, coincident with the injections of neoarsphenamine. The lesions are becoming anular. In addition to the macular eruption there are some vesicular lesions. It is surprising that it does not occur more often in pityriasis rosea. Pityriasis rosea under the microscope shows marked edema. Clinical evidence of this edema is remarkably scant. I think that pityriasis rosea should be seriously considered in this case. On the other hand, the possibilities are too serious for dogmatism. Arsenotherapy should be discontinued until the diagnosis is verified or refuted by microscopic examination.

DR. PAROUNAGIAN: I have never seen a case of pityriasis rosea develop two hours after an injection, involving such a large area as this and presenting vesicles and pustules.

BASAL CELL EPITHELIOMA WITH METASTASIS. Presented by DR. ELLER.

A chauffeur, aged 37, married and native born, entered Dr. MacKee's clinic at the Post-Graduate Medical School and Hospital on Sept. 6, 1927, with an indolent, granulating ulceration of the tissue, the size of a quarter, between the small and middle fingers of the right hand. The right ring finger had been amputated sixteen months before.

In August, 1924, he had gone to the Cornell Clinic because of a "sore" on his right ring finger. In October, 1924, a biopsy was done at that clinic and reported as an "epithelioma of low grade malignancy, originating from the inner sheath of hair shaft (Huxley's layer)." In April, 1926, he entered the Post-Graduate Hospital Surgical Service where the affected finger was amputated. The pathologic report was: "basal cell carcinoma originating in the skin and deeply invading the tissues on the flexor side of the finger." From May, 1926 to September, 1926, he attended an outpatient surgical clinic for treatment of the amputation wound which had never healed. He again entered the Post-Graduate Hospital on Sept. 1, 1926, because of a swelling in the right axilla. This was a gland and was removed. The pathologist reported "advanced metastatic squamous cell carcinoma." The patient continued to report for dressing of the amputation wound until Sept. 6, 1927, when he was referred to the skin department for the treatment of the ulceration at the site of amputation.

The ulceration was treated with supersoft roentgen rays on Oct. 4, 1927. Three violaceous, elevated lesions, resembling sarcoid and the size of a dime, were noticed on the flexor surface of the right forearm, midway between the wrist and elbow. One of these nodules was removed. The pathologic report by Dr. Satenstein was "typical basal cell epithelioma." This was so at variance with the clinical picture of the nodules that another lesion was removed and sectioned; however, the same pathologic condition was reported. Three additional lesions appeared on the arm, which were clinically and pathologically basal cell epithelioma. The section of the gland previously removed was now carefully studied by Dr. Satenstein who made a diagnosis of "metastatic basal cell epithelioma." Other pathologists who saw the sections were of the same opinion, although it was suggested that the rare type of "undifferentiated squamous cell carcinoma" ought to be considered.

At the time of presentation, the right arm was greatly swollen and edematous. He had been receiving deep roentgen therapy to the chest, neck and right axilla and seemed improved. His general condition, however, was such as to warrant an unfavorable prognosis.

DISCUSSION

DR. FRASER: The location seems to be unusual. The metastases in the nodes of the lymph glands speak against a diagnosis of basal cell carcinoma. As far as I am aware, the literature mentions only about five cases in which metastases have occurred in this type of carcinoma. The histologic picture certainly suggests the basal cell type of epithelioma, but the case may be one of an undifferentiated type of squamous cell carcinoma.

DR. MACKEE: As Dr. Fraser has said, few cases of metastasis of basal cell epithelioma are on record; moreover, there are few cases of primary basal cell epithelioma of the mucous membrane of the mouth. It is well known that perhaps 5 per cent of basal cell epitheliomas do not yield well to the use of roentgen rays or radium. The ordinary case of basal cell epithelioma responds exceedingly well to such treatment. General pathologists, who have had considerable experience with basal cell epithelioma, know that from 12 to 15 per cent of these lesions show keratinization and prickle cells. In this case, some of the sections do show keratinization; how should such a case be classified? If they contain squamous cells should they be classified as basal cell epitheliomas or as undifferentiated epitheliomas, or as prickle cell epithelioma (epidermoid cancer). Possibly they should be classified according to the highest type of cell found. In this connection, one must not forget the possibility of derivation from the layer immediately above the basal cell layer (cubocellular epithelioma).

DR. OULLMANN: I saw a case of this type with numerous, flat, reddish epitheliomas and keratoses on the hands and arms. There was a large tumor of the hand. There were no enlarged glands. The hand was amputated. Some of the lesions were basal cell epithelioma, while the tumor and the ulceration showed a squamous cell epithelioma.

I recall another case in a man about 80 years of age, in which the skin lesions showed the basal cell type. Enlarged glands showed the squamous cell type. In the present case the histologic picture shows the epidermis everywhere normal and the question arises whether the tumors did not originate from the glandular structure of the skin.

NEVUS LINEARIS (?). Presented by DR. OCHS.

This patient was presented at the last meeting of the Society. The eruption had not changed. Both nevus and leukoderma had been considered.

DISCUSSION

DR. WISE: I had an opportunity to look at the patient carefully in daylight and examine him with a Wood filter and ultraviolet rays. He presented true leukoderma of the hairline extending into the scalp and well defined pigmentation at the outer edge of the leukoderma. I did not see any signs which would lead to the diagnosis of nevus.

CONGENITAL SYPHILIS. Presented by DR. PAROUNAGIAN.

G. Y., aged 19, was referred to the Bellevue Syphilitic Clinic from the Eye service of that hospital where a diagnosis of interstitial keratitis was made. The patient's Wassermann test was three plus.

There was no history of infection. Examination showed the following: The patient presented an irregular anterior hairline, high palate arch and tubercles on the molars.

CONGENITAL SYPHILIS. Presented by DR. PAROUNAGIAN.

J. S., aged 28, was admitted to the Bellevue Clinic on Dec. 5, 1927. He showed marked manifestations of cerebrospinal syphilis with positive serologic changes in both the blood and spinal fluid. He denied infection. His father, aged 63, had heart disease. His mother, aged 61, was in fair health; she had had one stillbirth and two children, a boy and a girl, aged 14 and 15, respectively, had died from heart disease. The patient showed the following: tubercles on molars, high vault, irregular and imperfect hairline and protruding forehead.

D. L. SATENSTEIN, M.D., Secretary

Regular Meeting, Oct. 9, 1928

M. B. PAROUNAGIAN, M.D., *Chairman*

MYCOSIS FUNGOIDES. Presented by DR. PAROUNAGIAN.

Miss G., aged 53, had been referred to the presenter by her family physician in November, 1927, at which time she exhibited a fairly generalized eruption of an extremely pruritic nature. The lesions consisted of large erythematous patches under both breasts, in the axillae, and on the abdomen and genitopubic regions; a few lesions were present on the elbows and knees. According to the patient's statement, the first attack occurred in July, 1921. This lasted for some time, and during the next attack the patient was seen by a number of physicians and various diagnoses made, such as impetigo and psoriasis. After several visits in November and December, 1927, she discontinued her visits until Oct. 4, 1928, at which time the condition noted on presentation was observed. The patient appeared greatly emaciated, weighing a trifle more than 100 pounds (45.4 Kg.). The lesions were much more infiltrated and scaly, closely resembling those of psoriasis, with whitish scales. There were lesions on the knees and legs but none on the elbows. She had been much better until shortly before the time of presentation.

DISCUSSION

DR. WISE: The possibility of the eczema type of early mycosis fungoides should be considered, but, due to the fact that there are no signs of infiltration whatever and that the elevation of some of the lesions is due to edema and not to infiltration, I favor the diagnosis of pemphigus foliaceous. The lesions have a tendency to fade out in one or two days, which fact is strongly against the diagnosis of mycosis fungoides.

DR. ELLER: I have no diagnosis to offer. The patient's history seems to be against that of mycosis fungoides. She said that she would go for a year or more without any signs of itching. I have never heard of this occurring in active mycosis fungoides. She also said that itching was often absent at night. Mycosis fungoides is a disease in which the itching is so severe that the patient is kept awake at night.

DR. WALLHAUSER: I am inclined to consider the condition as acute dermatitis, as I do not feel that a positive diagnosis can be made at the present time; the absence of infiltration would seem to eliminate mycosis fungoides, and further observation in the development and course of the bullae would be necessary if pemphigus foliaceous is to be considered.

DR. LEVIN: I would not make a positive diagnosis in this case on the present examination alone. Exudation is not present, and in some places there is evidence of a distinct border which is elevated and separates the lesions from the surrounding normal skin. Although scaling is present, it is not the distinct crusting that

would be found in lesions that gave rise to crusting. I cannot agree with the diagnosis of pemphigus foliaceous because of the absence of serous exudation. I favor the diagnosis of mycosis fungoides.

NEVUS PSORIASIFORMIS OR PSORIASIS(?). Presented by DR. SCHEER.

G. S., a school girl, aged 15, born in the United States, went to the Medical Department of the New York Post-Graduate Medical School and Hospital on Oct. 6, 1928. At birth, the entire left side of the body was red. When the child was 3 years old, the lesions had become scaly and remained so thereafter. The lesions became less scaly after the application of olive oil or cold cream. Twelve years prior to presentation, a few of the lesions had been treated with roentgen rays and radium. At the time of admission to the Post-Graduate Skin Clinic, she presented guttate and gyrate, sharply defined, erythematous areas covered with micaceous scales which left bleeding points when they were removed. They were almost entirely confined to the left half of the body, involving the scalp, face, trunk and extremities. There was one isolated lesion under the right breast, and a few guttate lesions were present on the right elbow with some lesions on the right side of the scalp. On the left wrist, forearm and elbow were several areas which presented atrophy and telangiectasia. These were the areas that had received roentgen and radium treatment. The diagnosis was either psoriasis or psoriasiform nevus.

DISCUSSION

DR. OCHS: This case is interesting because the lesions were on one side. My diagnosis is psoriasis.

DR. MOUNT: My impression is the same as that of Dr. Ochs. I do not believe that it is a nevus unilateralis.

DR. ROSEN: I think that the patient has psoriasis. The unusual feature of the case is its distribution, in that the eruption is almost entirely confined to one side. The clinical features of the individual lesions, however, are typical of psoriasis.

DR. GILMOUR: I agree with the diagnosis of psoriasis.

DR. WALLHAUSER: I agree with the diagnosis of psoriasis.

DR. ELLER: I agree with the diagnosis of psoriasis.

DR. FRASER: I likewise agree with the diagnosis of psoriasis.

DR. WISE: I accept the diagnosis of a psoriasiform nevoid defect of the skin. Analogous instances are the cases of lichen planus linearis which appear as a nevoid manifestation.

DR. SCHEER: The fact that this condition commenced at birth can be accepted. The father is clear on that point.

DR. PAROUNAGIAN: I agree with the diagnosis of nevus. I do not believe the case is one of psoriasis, although the lesions greatly resemble psoriasis.

DR. SATENSTEIN: I think that it is a nevus.

DR. SCHEER: The father consulted a number of dermatologists when the patient was young. Among them was Dr. Whitehouse, who made a diagnosis (the patient was then 3 years of age) of nevus. The fact that this has been present all the time, never disappearing under any kind of therapy, of course, favors nevus. The disappearance and reappearance of the scales are not of much importance. Of course, the presence of a lesion on the right flank, tip of the elbow and right side of the scalp does not make it strictly a one-sided affair. In connection with this case I recall a patient I saw a number of years ago at the Vanderbilt Clinic, a woman, of middle age, who for months had been coming for treatment for psoriasis on the dorsal surface of the left hand and wrist. I was asked to look at the hand because the condition did not respond to treatment with either roentgen rays or chrysarobin. The patient was completely undressed for examination for the first time, and she showed a marked linear nevus extending up the entire arm and shoulder; about the shoulder it did not look like psoriasis, but on

the hand it did. Of course, it is hard to make an exact diagnosis in the present case. One must weigh the factors pro and con. I think the weight of evidence points more toward nevus than toward psoriasis.

SYPHILIS. Presented by DR. GILMOUR.

M. H., aged 49, married, a housewife, born in the United States, thirty-two years previous to presentation, had a lesion on the leg and was treated for syphilis with internal medication. The results of a Wassermann test were reported as negative ten years prior to presentation and again on Feb. 16, 1928. The thyroid gland had been enlarged for thirty years. The right knee was swollen and painful in February, 1928, and was called "rheumatism" by the patient.

Four years prior to presentation a redness began, gradually appearing under the left eye. The size increased from an area the size of a dime to that of a quarter. The patient had not had syphilitic treatment for a year or more before presentation.

At the time of examination the patient showed a red base the size of a twenty-five cent piece. There were small, red, indurated, elevated papules on the edge that gave a gyrate appearance. The slight red small depression was caused by a small pustule which was opened by a nurse two weeks prior to presentation. The pustule was painless.

DISCUSSION

DR. ROSEN: I agree with the diagnosis of tertiary syphilis. The patient presented a somewhat irregular patch consisting of small, dark red nodules, some undergoing involution while others were still active.

DR. SCHEER: I think that the lesions are sarcoid, although the patient may have syphilis. In one year, if a patient with syphilis were not treated, the condition would have healed spontaneously, at least in parts, while it would have spread in others and left scars. It is unusual for tertiary syphilis to remain more or less stationary in an area for one year without treatment.

DR. MOUNT: I am inclined to the diagnosis of sarcoid.

DR. OCHS: I think that the condition is sarcoid for the same reason Dr. Scheer gave.

DR. ANDREWS: I think that it is a tertiary nodular syphiloderm, because there seemed to be scars and a serpigenous arrangement to the indolent inflammatory nodules.

DR. WISE: I favor a diagnosis of sarcoid because of the absence of the history of syphilis and the negative Wassermann reaction. The clinical appearance of the lesion certainly favors a diagnosis of sarcoid.

DR. LEVIN: I favor the diagnosis of tertiary syphilis, because the lesión is made up of a serpigenous area which is a fading dark red. Brownish-red nodules are also present, two of them showing ulcerations. Against the diagnosis of sarcoid, it is my opinion that the lesions would tend to be more presistent and would not show the same tendency to rapid fading. Neither would there be ulceration.

DR. PAROUNAGIAN: I do not think this is syphilis. The color, the apple jelly nodule and the negative Wassermann reaction militate against a diagnosis of syphilis and favor the diagnosis of either sarcoid or epithelioma.

DR. ELLER: The lesion has been present without change for four years. This is against the diagnosis of syphilis as Dr. Scheer stated. I favor a diagnosis of sarcoid.

ARSENICAL KERATOSIS, PIGMENTATION AND CARCINOMA. Presented by DR. FRASER.

This case was presented at the Section on Dermatology of the New York Academy of Medicine, in December, 1925 (ARCH. DERMAT. & SYPH. **13**:569

[Dec.] 1926). During the latter part of 1925, metastases developed in the axilla. The axillary growth was removed surgically, and for nearly two years there was no evidence of a recurrence. The patient reported just prior to presentation with a nodule the size of a bean in the skin of the abdomen about 2 inches (5 cm.) to the right of the umbilicus, of one year's duration.

DISCUSSION

DR. WISE: The point of interest is the one Dr. Fraser brought up, whether the lesion on the abdomen is basal or squamous cell epithelioma, or perhaps mixed. It is not possible to differentiate it clinically. I believe that the great majority of epitheliomas arising in an arsenical keratotic base are squamous cell epitheliomas. It would be interesting to have Dr. Fraser tell what the pathologic diagnosis is at the next meeting.

DR. SCHEER: As Dr. Wise says, it is impossible to make a pathologic diagnosis clinically, but, on account of the appearance and comparatively rapid growth, I am inclined to think it is a mixed cell type. Several years ago, Darier brought out the fact that they grow more rapidly than the ordinary basal cell epithelioma.

DR. FRASER: I shall remove the growth and bring a section to the next meeting.

BASAL CELL EPITHELIOMA OF THE RIGHT HAND WITH METASTASES TO THE AXILLARY GLANDS. Presented by DR. ELLER.

T. E., a chauffeur, aged 37, from the Skin Department of the New York Post-Graduate Medical School and Hospital, was presented before this society at the May, 1928, meeting. He was again presented to demonstrate the result of radical treatment and because of peculiar microscopic observations. Microscopic examinations were made of the tissue after amputation of the arm at the shoulder joint showed a mixed picture of basal cell and squamous cell epithelioma. Lesions on the skin and some of the glands presented a microscopic picture of a true basal cell epithelioma, while the other glands presented the structure of a typical squamous cell epithelioma. The right arm was amputated in June, 1928, and since that time the patient has gained 14 pounds (6.4 Kg.).

DISCUSSION

DR. LEVIN: I presented this case at the Academy of Medicine about four years ago as a basal cell epithelioma arising from the hair follicles. At that time the same doubt was expressed by some of the speakers as to the diagnosis of epithelioma, and it was suggested that since the lesion was so superficial clinically it seemed more like eczema than epithelioma.

DR. ANDREWS: It seems, according to rule, that a metastatic lesion ought to be a transitory cell growth. Some sections may look like basal cell epithelioma, but Dr. Ewing said that undifferentiated cells were also present. I think the case should be studied further before being definitely diagnosed basal cell epithelioma.

MELANOMA AND KAPOSI'S SARCOMA. Presented by DR. ELLER.

I. M., a dentist, aged 51 years, married, born in Lithuania, entered the Skin Department of the New York Post-Graduate Hospital on June 29, 1928. He gave a history of having had multiple tumors on the extremities for the previous eight years. The condition had been diagnosed elsewhere as Kaposi's idiopathic hemorrhagic sarcoma. The lesions had been treated with large doses of arsenic internally and locally by filtered roentgen rays.

At the time of examination he presented numerous violaceous raised and infiltrated nodules the size of a dime and larger on the legs. A similar solitary lesion

was present on the upper left side of the palate. The left palm, especially about the hypothenar eminence, presented three or four raised, hard, infiltrated, verrucous excrescences. The lesions were excised by surgical diathermy. The microscopic study of the tissue removed, made by Dr. Satenstein, revealed an infiltrating carcinoma of the melanoma type, but without pigment.

The patient was presented to show the results of treatment and also to ask the opinion of the members concerning further treatment as new nodules had appeared. Amputation at the elbow was advised by a specialist in cancer and an opinion regarding that point was requested from the members.

DISCUSSION

DR. ANDREWS: I saw the patient about six months ago at the Vanderbilt Clinic and the General Memorial Hospital. He had a cauliflower-like tumor on the left hand. A biopsy was made and the specimen studied by Dr. Ewing who reported spindle cell sarcoma. He said that the condition was malignant and that it would recur but he did not think that it would invade the lymph nodes very early. He advised surgical removal followed by heavy doses of gamma rays. The tumor was removed with the coagulating current and the area was given intensive doses of filtered roentgen rays. The patient refused to have radium therapy. He was not an easy patient to handle. The growth was controlled while being treated with the roentgen rays.

DR. SATENSTEIN: I would suggest intensive irradiation. If in two or three months improvement does not result then amputation can be considered. I would give the patient the benefit of the less heroic therapy.

DR. FRASER: If the lesion were a malignant type of sarcoma, there should have been evidences of metastasis to the internal organs before now.

DR. ANDREWS: About six or eight months ago I examined the patient's lungs; he was losing weight and I found no evidence of metastases. He has, however, had a cough for years.

DR. FRASER: In view of the behavior of this growth, I would be opposed to immediate amputation. Treatment with radium should first be tried.

DR. SATENSTEIN: My impression was that the tumor was a melanocarcinoma without pigment; there was nothing in the sections that suggested a sarcoma.

DERMATITIS HERPETIFORMIS (TREATED WITH HEMOTHERAPY). Presented by DR. OULMANN.

A man, aged 52, was seen by the presenter in February, 1928. He gave a history of having had the eruption over a period of five years. The condition had started on the face as grouped blisters, which later attacked every part of the body. During the first year, the attacks were limited to one region. During the four years prior to presentation the entire body had been constantly covered with lesions, and while one region had healed another started anew. At the time of presentation the patient showed only a few broken down blisters on the extensor side of the left knee. He was presented because of being one of three patients with dermatitis herpetiformis seen by the presenter in the same year, in whom good results were obtained from treatment with injections of whole blood; 50 mm. of blood is withdrawn and 30 mm. injected after being filtered through sterile gauze. The patient had had, besides, weekly intravenous injections of calcium preparations during the first two months, bimonthly and then for the past two months one injection per month, after which time he had received calcium by mouth. In the other two cases referred to, the patients were entirely cured. At the time of presentation the patient did not show any other subjective symptoms except a slight, occasional, burning sensation in various areas.

CLEVELAND DERMATOLOGICAL SOCIETY

H. J. PARKHURST, M.D., *Reporter*

Regular Meeting, Sept. 27, 1928

CHARLES G. LAROCCO, M.D., *Presiding*

SEBORRHEIC DERMATITIS: NEURODERMATITIS. Presented by DR. STEINBERG.

E. L., a boy, aged 8, had had exudative eruptions since infancy, with crusting on the scalp. When he was presented, the face, neck, elbows, popliteal regions, legs and genitalia were involved, with considerable lichenification and fissuring. Results of skin sensitization tests had been negative, excepting to chicken feathers. Roentgen therapy had been used at intervals during the previous five years, with only temporary benefit.

DISCUSSION

DR. COLE: This is a case of chronic seborrheic dermatitis of the familial type, such as is often seen. Perhaps there is some idiosyncrasy. These are disappointing cases to treat. Sutton uses the quartz lamp on account of the danger of too much roentgen treatment. Superfatted soaps and olive oil are useful in keeping the skin pliable.

DR. LAROCCO: Frequent bathing aggravates this condition.

DR. NORRIS: In a similar case, in which the condition cleared up several times under roentgen treatment, but recurred, treatment by a gastro-enterologist was followed by an apparent cure, and there has not been any recurrence for a year.

DR. FISHER: Most patients seem to outgrow the condition.

DISSEMINATED LUPUS ERYTHEMATOSUS. Presented by DR. PARKHURST.

P. L., a boy, aged 17, in good general health, whose family history was negative for tuberculosis, had first noticed erythematous patches on the nose and cheeks one year previous to examination. These persisted, and new patches appeared on the ears and scalp. One month before the time of presentation, many small patches appeared on the face and arms following sunburn. There was a medium coin-sized patch on the right thigh. The lesions were sharply outlined, with an adherent scale bearing follicular plugs; some showed central atrophy, and those on the scalp presented alopecia. It was asked whether small doses of gold compounds could be administered safely in this case. (Ten days later, small ascending doses of gold sodium thiosulphate were started, twice a week, and after two weeks there was definite improvement, without untoward symptoms.)

DERMATITIS MEDICAMENTOSA. Presented by DR. CUMMER and DR. LAROCCO.

A. L., a woman, aged 22, had the typical, erythematous, scaling patches of lupus erythematosus the size of a coin on her face. She received five intravenous injections of gold sodium thiosulphate, the last three being 0.1 Gm. each. Following the fifth injection, a generalized morbilliform eruption appeared, tending to become confluent, with pruritus. This eruption gradually subsided, with pronounced desquamation. The lesions of lupus erythematosus showed some tendency to involution.

LUPUS ERYTHEMATOSUS. Presented by DR. BARNEY.

Mrs. M. H., aged 24, presented an eruption on the face, scalp and back, of seven and one-half years' duration. The lesions on the back appeared one month before the time of presentation, following a severe sunburn, and their distribution corresponded to the areas exposed when a bathing suit had been worn. The lesions

were erythematous patches, with scaling, follicular plugs and a tendency to central atrophy, most noticeable in the scalp. The patient had not lost weight. She had pneumonia five months previous to the present illness. There was roentgenologic evidence suggestive of pulmonary tuberculosis.

LUPUS ERYTHEMATOSUS. Presented by DR. COLE and DR. DRIVER.

E. B., a man, had an eruption on his face for one year. On the right cheek were two irregularly outlined pigmented areas. On both alae nasi were flat patches with elevated erythematous borders and central branny scaling with follicular plugs.

DISCUSSION

DR. FISHER: Some of my patients have responded to two or three injections of gold preparations, while others did not respond to twelve or even twenty-four. The injections must be stopped when a reaction appears.

DR. CUMMER: It has been recommended that the brand of the gold compound be changed after a reaction.

DR. COLE: I have observed several severe generalized eruptions after the administration of gold compounds, and the lupus erythematosus was much benefited. These cases do not seem to present an idiosyncrasy, and one may start the treatment with a small dose and increase it gradually without a reaction.

PSORIASIS (?). Presented by DR. COLE and DR. DRIVER.

L. J., a negro boy, aged 4, presented thickened, scaling, sharply outlined plaques on the soles, right palm, right knee and left elbow. There was a medium coin-sized patch, with clearing center, in the nuchal region.

DISCUSSION

DR. NETHERTON: I consider this a case of trichophytosis.

DR. DRIVER: It may be a case of keratoderma palmaris et plantaris.

DR. PARKHURST: The nuchal lesion seems characteristic of tinea corporis, and I should favor this diagnosis for all the lesions.

DR. COLE: The patient came to the hospital nearly two months ago, and on examination we found a typical psoriatic patch on the leg. Apparently, through contagion in the ward, a lesion of trichophytosis appeared on the neck.

CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

F. C., an Austrian, aged 41, had a generalized exfoliative dermatitis of seven months' duration. He was a chronic user of alcohol, and had a psychosis, optic atrophy and hepatic cirrhosis. The leukocytic count was 9,600, with 59 per cent neutrophils, 2 per cent eosinophils, 3 per cent basophils, 6 per cent lymphoblasts, 22 per cent small lymphocytes, 6 per cent large mononuclears and 2 per cent transitional cells.

DISCUSSION

DR. CUMMER: The appearance of the lesions and the pitting of the nails suggest a diagnosis of psoriasis.

DR. COLE: The patient seems to have both psoriasis and alcoholic pseudopellagra.

MULTIPLE ABSCESSES OF AXILLARY SWEAT GLANDS. Presented by DR. COLE and DR. DRIVER.

L. J., a negro boy, aged 3, showed a peculiarly folded and thickened axillary skin, with small suppurating lesions in various stages. The axillary and posterior cervical lymph nodes and the tonsils were enlarged.

PEMPHIGUS. Presented by DR. COLE and DR. DRIVER.

R. W., a boy, aged 7, had a generalized vesicular outbreak two years previous to examination, with a high fever. The condition persisted, new lesions appearing in crops, and at presentation, the face, forearms and legs were principally involved. There had been oral and conjunctival lesions.

JUVENILE PARESIS. Presented by DR. COLE and DR. DRIVER.

R. M., a girl, aged 10 years, had been seen first in 1925 with ptosis of the left upper eyelid and a strongly positive Wassermann reaction. In 1926, acute iritis developed, followed by hemiplegia, which appeared suddenly and cleared up quickly under treatment with sulpharsphenamine. Following this, there were occasional convulsions, and a persistent moderate paresis of the left side of the face and body. The speech was defective, and there were discrepancies in memory. The reflexes were hyperactive. Tryparsamide was being administered. The patient's father gave a history of syphilitic infection, but the mother and four children seemed normal. The mother had had one miscarriage.

DERMATITIS EXFOLIATIVA. Presented by DR. COLE and DR. DRIVER.

A. W., aged 53, a street car conductor, had a generalized exfoliative erythroderma for eight months, without any discovered cause. The leukocytic count was 24,620; the differential count was normal.

DERMATITIS EXFOLIATIVA. Presented by DR. COLE and DR. DRIVER.

A. M., a man, aged 36, was a paper box maker who fed newly printed cardboard boxes into a press. Four months previous to examination, a dermatitis appeared on his hands, later extending to the feet and becoming generalized. The patient applied compound solution of cresol to the eruption from the onset.

DISCUSSION

DR. BARNEY: In the first of these two cases an examination of the blood and a study of the lymph nodes should be made. The second is apparently of occupational origin, and seems to have been caused by external irritants. Both cases are of the type which, when they become chronic, resemble what has been called pityriasis rubra of Hebra.

DR. RAUSCHKOLB: The gilt on the paper boxes handled was found to be 80 per cent tin disulphide.

GRANULOMA INGUINALE. Presented by DR. COLE and DR. DRIVER.

Mrs. F. A., a negress, aged 55, had an ulcer of the fourchet for five months. It was sharply outlined, with rolled, undermined edges and a base which did not bleed readily. The inguinal lymph nodes were not enlarged.

KERATODERMA BLENORRHAGICUM (?). Presented by DR. COLE and DR. DRIVER.

L. T., a negro, aged 37, a laborer, who had an intermittent urethral discharge for three years, complained of plantar pains for five months. There were exostoses on both heels. A dermatitis was present on the lower third of each leg, and the skin of the feet was hyperkeratotic.

MULTIPLE IDIOPATHIC HEMORRHAGIC SARCOMA OF KAPOSI. Presented by DR. COLE and DR. DRIVER.

Mrs. E. M., aged 65, for twelve years noticed the appearance of dark nodules on the arms and legs, some of which disappeared. On the medial aspect of the right thigh was a firm plaque, 7 inches (18 cm.) in diameter, and above the knee another, 4 inches (10 cm.) in diameter. Others were found on the inner side of the left knee, on the anterior aspects of both ankles and on the left arm.

MULTIPLE IDIOPATHIC HEMORRHAGIC SARCOMA OF KAPOSI. Presented by DR. COLE and DR. DRIVER.

N. B., an Italian, aged 48, married, thirty years previously noticed a small blue tumor on the upper part of his right ear, which disappeared in two or three months. Sixteen years later, similar tumors appeared on the median border of the left hand, and persisted for a long time. About five years before presentation, similar masses began to appear on the left hand, where they remained; they were painful. The right brow, the right hand, the feet and the legs were also involved, the nodules being painless. For two years, blue tumors which bled easily had been appearing on the left foot and the lower part of the leg. At presentation, both hands, wrists, feet and ankles, and the lower parts of both legs were involved, especially the left hand and the left foot. The lesions were asymmetrical, irregular, bluish, macular patches. On the left hand, foot and ankle there were also papules, nodules and tumors ranging up to 2 cm. in diameter, which were round, discrete, firm, not tender and bluish or violaceous. On the dorsum of the left foot, three or four of the tumors had broken down; they bled readily. Results of the general examination and laboratory tests were negative. The histologic picture was that of Kaposi's sarcoma.

GRANULOMA INGUINALE. Presented by DR. COLE and DR. DRIVER.

P. S., a negro, aged 30, a steel worker, had a penile ulcer for fifteen months. It nearly encircled the shaft of the penis. The diagnosis was made by exclusion after a biopsy. Donovan bodies were not found in smears.

DERMATITIS MEDICAMENTOSA: ARSENICAL MELANODERMA AND KERATOSES. Presented by DR. COLE and DR. DRIVER.

J. G., a laborer, aged 39, presented a condition of three or four years' duration, having spent most of this time in the hospital on account of polyneuritis, abdominal ascites and general asthenia. He denied taking any drugs previously. There was a generalized mottled hyperpigmentation, and palmar keratoses of the hard, discrete type were present. Biopsy studies had been made.

CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

L. C., a housewife, aged 34, presented a gradually enlarging nodular process on the scalp, of two years' duration. It was said to have followed the application of a permanent wave. Almost the entire anterior portion of the vertex was involved. There were grouped, rounded, pinkish, firm, nodular lesions, the size of a dime and smaller, which were confluent in places. The underlying scalp was movable with difficulty. On the right side of the vertex was a medium coin-sized nodule. Results of the general examination and the Wassermann reaction were negative. The biopsy specimens were suggestive of sarcoid.

DISCUSSION

DR. PARKHURST: The clinical appearance is that of an endothelioma.

DR. COLE: Possibilities of tuberculosis and a malignant condition were considered. Two biopsies were taken, which partly bore out our tentative diagnosis of sarcoid. Giant cells were not found.

DERMATITIS HERPETIFORMIS (?) AND ICHTHYOSIS. Presented by DR. STEINBERG.

C. F., a foundryman, aged 44, with a markedly ichthyotic skin, had a pruritic vesicular eruption over the shoulders, arms, legs, thighs and ankles for a year. Excoriations and crusts were present. The administration of arsenic and roentgen therapy gave only temporary relief.

DISCUSSION

DR. NETHERTON: The patient has ichthyosis, in addition to a dermatitis due, apparently, to external irritants.

DR. COLE: This is probably an infectious eczematoid dermatitis arising from varicose lesions on the leg.

DERMATITIS MEDICAMENTOSA: PHENOLPHTHALEIN ERUPTION. Presented by DR. COLE and DR. DRIVER.

E. G., a laborer, aged 48, had three generalized bullous eruptions in a year and a half, the mucous membranes having been extensively involved. The lesions were erythematous plaques, followed by hyperpigmentation. Recovery was rapid. The patient had taken Ex-Lax. A new outbreak was noted following a small dose of phenolphthalein.

ERYTHEMA ELEVATUM DIUTINUM. Presented by DR. COLE and DR. DRIVER.

W. W., a boy, aged 8, presented a tumor the size of a large coin on the right wrist, of eight months' duration, and smaller ones on the left elbow and both ankles. The histologic picture was that of erythema elevatum diutinum.

DISCUSSION

DR. COLE: The biopsy confirmed the diagnosis.

DR. PARKHURST: It has been suggested that erythema elevatum diutinum and granuloma annulare are two stages of the same process.

CASE FOR DIAGNOSIS. Presented by DR. CUMMER.

Miss A. K. first noticed a mass on the right side of her nose about thirteen years previously; it extended to the right cheek. After eighteen months, several roentgen exposures were given, and the lesion apparently cleared up. Four years before presentation, the right nasal mucosa became involved, and radium was administered. There was a smooth white scar on the right side of the nose, extending onto the right cheek, with contraction. The mucous surface of the right nostril showed a thin scar. On the upper lip were two hard, elevated, deep seated nodules, one on each side of the median line. The overlying skin was erythematous. The nodules had grown rapidly for the previous two months. Permission for a biopsy could not be obtained.

DISCUSSION

DR. CUMMER: This appears to be a basal cell epithelioma.

DR. BARNEY: The possibility of gumma must also be considered. The nodules on the upper lip suggest syphilis.

DR. NETHERTON: The duration seems too long for syphilis, without some change. The nodules seem epitheliomatous.

DR. DRIVER: Epithelioma may extend under the skin after irradiation.

CASE FOR DIAGNOSIS. Presented by DR. NETHERTON.

H. E., a mechanic, aged 49, had a "nervous breakdown" one year previous to examination, and lost 40 pounds (18.1 Kg.) in four months. He presented an eruption of ten years' duration, which began with a small scaly spot on the flexor surface of the right arm. It gradually spread, involving the trunk, waistline and thighs. A slight burning sensation was noted occasionally. The eruption was symmetrical, involving the arms, especially their flexures, the trunk, the thighs and the inner surfaces of the groins. The individual lesion was a flat, slightly scaling, shiny papule, the size of a pinhead. The lesions were confluent in places, with a linear arrangement in some areas and a reticulation in others. They varied from bright to brownish red. Apparently there was slight atrophy in areas on the trunk.

The scales were slightly adherent. The whole eruption was superficial, without infiltration. Observations in the clinical laboratory were negative. A biopsy had been done.

DISCUSSION

DR. PARKHURST: The clinical and histologic picture is that of lichen planus.

DR. COLE: The case is interesting because of its long duration. The lesions on the arms are like the moniliform type of lichen planus. The eruption resembled parapsoriasis, but it was pruritic, and shiny papules were present.

PARAPSORIASIS (PITYRIASIS LICHENOIDES CHRONICA). Presented by DR. NETHERTON.

Miss E. S., aged 32, in 1927 developed a generalized eruption, consisting mainly of small, oval, superficial, pink plaques with a scale like cigaret paper. The condition was thought to be pityriasis rosea. This disappeared, but a few weeks before presentation a new eruption appeared, which was resistant to treatment. It was more or less generalized, involving the trunk and extremities but sparing the face; there were a few lesions on the neck. The eruption consisted mainly of small, yellowish-pink papules, with a small adherent scale. A few superficial, scaly plaques were scattered over the body. Subjective symptoms were lacking. At the time of the first attack, the patient was suffering from ulcerative colitis.

EPIDERMOLYSIS BULLOSA HEREDITARIA. Presented by DR. CUMMER and DR. LAROCCO.

B. N., a boy, aged 11 years, presented a generalized eruption of five months' duration, consisting chiefly of scars. A few vesicles and tiny epidermal cysts were present, and bullae were said to have appeared repeatedly at points of trauma.

NEVUS UNIUS LATERIS. Presented by DR. LAROCCO.

N. L., a girl, aged 7, gave the history of a small flat brown spot appearing on the right side of the chest when she was 3 months of age. This gradually spread until the age of 18 months. Shortly before examination it began to spread further. On the right side of the trunk, converging over the right shoulder and extending in an irregular line along the medial side of the forearm, was a brownish area of pigmentation, generally confluent.

PARAPSORIASIS. Presented by DR. COLE and DR. DRIVER.

F. F., a man, aged 24, developed an eruption on the arms eight months previously to examination; this became generalized, without subjective symptoms. There was a lichenoid eruption, most marked on the extremities. The histologic picture confirmed the diagnosis.

H. J. PARKHURST, M.D., *Reporter*

Regular Meeting, Oct. 25, 1928

J. R. DRIVER, M.D., *Presiding*

LICHEN SCROFULOSORUM. Presented by DR. COLE and DR. DRIVER.

Mrs. F. K., aged 31, apparently in good health, first noticed an itching eruption on the abdomen and feet seven months previous to presentation. The sensation of itching vanished as the eruption spread. There was a peculiar lichenoid erup-

tion composed of small follicular papules in large coin-sized groups, on the forearms, the flanks and the left breast. The Wassermann reaction was negative. Histologic studies were made.

DISCUSSION

DR. PARKHURST: Clinically, the diagnosis lay between lichen scrofulosorum and lichen nitidus, the former being more probable. The histologic picture seemed to be that of lichen scrofulosorum.

DR. GILLESPIE: In lichen nitidus the papules are more distinct, without scaling. This case seems to be one of lichen scrofulosorum, clinically and histologically.

DR. COLE: Both lichen scrofulosorum and lichen nitidus are looked on as tuberculids. The lesions on the back are discrete and look like lichen nitidus; those on the ankles scale and suggest lichen scrofulosorum. The sections contain giant cells. The patient should be examined for signs of tuberculosis.

DERMATITIS HERPETIFORMIS. Presented by DR. GIBANS.

Mrs. J. M., a farmer's wife, aged 51, had an intensely pruritic eruption for eight years. A grouped eruption of vesicles and bullae in various stages, with crusts, excoriations and pigmentation, were seen over the scalp, face, trunk and proximal parts of the extremities. The patient was in good general health and had not lost any weight since the onset of the condition.

DISCUSSION

DR. COLE: I agree with the diagnosis of dermatitis herpetiformis.

CASE FOR DIAGNOSIS. Presented by DR. NETHERTON.

J. M., a man, aged 45, had six children. His wife had not had any miscarriages. For sixteen years, he had worked in an artificial gas plant, where he had inhaled gas fumes. For fourteen years, he had had difficulty in breathing. There was a partial sinking of the anterior part of the nose and a widening of the tip. Marked stenosis of the anterior and posterior nares was noted. A painless superficial ulceration occupied the soft palate, and the uvula had sloughed away. The sinuses were clouded. On two different occasions, biopsy sections were reported as showing "a nonspecific granuloma of no special type." The lesion was not tuberculous in structure. The Wassermann reaction of the blood was negative. Cultures and smears from the throat showed staphylococci and a few diphtheroid organisms, also a few yeast cells. The condition seemed gradually progressive.

DISCUSSION

DR. PARKHURST: The appearance of the ulceration on the soft palate is suggestive of tuberculosis.

LUPUS ERYTHEMATOSUS. Presented by DR. NETHERTON.

A. H., a married man, aged 53, had a slowly progressive baldness for a number of years. In May, 1928, small keratotic follicular plugs were found on the scalp; they could be expressed like comedones. None appeared in the many, smooth, scarred areas which were hairless. At presentation, most of the follicular plugs had disappeared. Eruptions were absent on other parts of the body.

DISCUSSION

DR. CUMMER: The appearance of the scars and the history of comedone-like cones plugging the follicular orifices would strongly suggest Brocq's pseudopelade.

DR. COLE: I have never seen lupus erythematosus of the scalp without erythematous lesions, but the history of response to treatment with gold compounds favors the diagnosis of lupus erythematosus.

SYCOSIS OF THE LIP WITH ELEPHANTIASIS. Presented by DR. COLE and DR. DRIVER.

C. A., a young negro, presented a follicular pustular eruption of the upper lip of four months' duration; the nares were also involved. For three months, the upper lip had been swollen most of the time; at presentation, it was firm and greatly swollen. The anterior nares were excoriated and crusted, and there was an apparently destructive folliculitis of the upper lip, with scaling and crusting.

DISCUSSION

DR. GIBANS: One first thinks of sycosis, with infection causing the lip to swell.

DR. GILLESPIE: Have the teeth and sinuses been examined? Would sycosis produce so much swelling? There is more likelihood of an infection blocking the lymphatics.

DR. BARNEY: There is a history of recurrences, with rapid onset, suggesting angioneurotic edema more than obstructive lymphangitis.

DR. CUMMER: I have seen this patient before. The swelling has never completely subsided. The pustular eruption helps to rule out angioneurotic edema.

DR. PARKHURST: I agree with Dr. Gillespie. Apparently the process originates in a nasal infection, as the crusted nares would indicate. The sycosis and swelling seem to be secondary to this, and the condition approaches a solid edema of the lip.

PARAPSORIASIS (?). Presented by DR. COLE and DR. DRIVER.

G., an automobile mechanic, aged 41, had an injection of quinine and urea hydrochloride for hemorrhoids in July, 1928. Later in July, following severe sunburn and mosquito bites, a burning eruption appeared on the hands and face, and extended over the body. A more or less generalized, dull red eruption appeared most extensive over the upper trunk. The eruption was diffuse over the hands, feet and face, with scattered areas on the arms, legs and thighs. There was extensive scaling of the scalp. The affected areas of the skin were thickened, somewhat shiny and finely scaling. Some of the discrete areas varied in size from that of a pinhead to that of a dime. There was a suggestion of atrophy in places. The scrapings were negative for fungi.

DISCUSSION

DR. NETHERTON: This seems to be either parapsoriasis or pityriasis rubra pilaris. There are no follicular keratoses, but there is some palmar and plantar hyperkeratosis.

DR. GIBANS: The patches had the appearance of tinea versicolor.

DR. COLE: Exposures to the quartz lamp have changed the picture.

DR. GILLESPIE: Palmar hyperkeratosis would be peculiar in parapsoriasis.

DR. PARKHURST: I would favor a diagnosis of early pityriasis rubra pilaris. It may begin by imitating seborrheic dermatitis.

DR. DRIVER: At first, we thought of tinea versicolor, but fungi were not found, and a response was not obtained to applications of sodium thiosulphate.

ERYTHEMA MULTIFORME. Presented by DR. COLE and DR. DRIVER.

K., a street car conductor, aged 38, presented an extensive erythematous eruption on the trunk and extremities, of a week's duration. The ankles had been swollen for two days. The general health had been good, and drugs had not been ingested. Located chiefly over the back and chest were many single and confluent erythematous patches, the size of a coin, with some central involution. Lesions were absent on areas commonly exposed to sunlight.

DISCUSSION

DR. PARKHURST: The urticarial appearance of the lesions, with dermographism, favors a diagnosis of toxic erythema of the multiform type.

DR. CUMMER: Some lesions on the back show a central crinkling and a distribution suggesting pityriasis rosea.

DR. BARNEY: The rapid onset and the rapid involution favor a diagnosis of toxic erythema.

DR. RAUSCHKOLB: I favor a diagnosis of erythema multiforme.

DR. NETHERTON: The eruption looks like an atypical pityriasis rosea, but the urticaria and purpura suggest erythema multiforme.

DR. DRIVER: The swelling of the ankles and knees is more in line with a toxic process than with pityriasis rosea.

CASE FOR DIAGNOSIS. Presented by DR. NETHERTON.

Mrs. C. M., aged 28, noticed soreness in the right side of the chest in the fall of 1927, together with a fever of 103 F. An abscess developed and was incised a week later. During three months, four others appeared, in the right wall of the chest, in the right axilla, above the right clavicle and on the left side of the neck. Each sinus had a dull erythematous infiltrated mouth, and a purulent discharge. A deep, punched-out ulcer with a granulomatous border was noted over the sternum. An enlarged cervical lymph node was observed near the sinus in the right side of the neck. The patient's general health was fairly good. During the onset of the condition, she had night sweats. She became tired easily and was dyspneic after exertion. Smears and cultures were negative for tubercle bacilli or fungi. The Wassermann reaction was negative. There were signs of pulmonary tuberculosis. A slight elevation of temperature was noted in the afternoons.

A guinea-pig had been inoculated, but too recently for a report to be given. A biopsy had been performed, and slides were presented.

DISCUSSION

DR. NETHERTON: We considered the condition either a fungus or a tuberculous infection, but found nothing in the smears nor from histologic examination to warrant this diagnosis. It is more suggestive of actinomycosis, although the patient has a focus of tuberculosis.

DR. COLE: A negative tuberculin test might help in the differentiation. I would suggest that the test be tried. I consider the condition tuberculous.

DR. BARNEY: As a rule, actinomycosis attacks the periosteum. I suggest roentgen studies.

DR. CUMMER: The negative results from examination of the smear favor a diagnosis of tuberculosis, for *Actinomyces* would be found easily.

VACCINIA (AUTO-INOCULATION). Presented by DR. COLE and DR. DRIVER.

F. R., a small boy, had been vaccinated on the left arm two weeks prior to examination. A "take" was noticed after six days, but shortly before this a red fissured spot appeared on the lobe of the right ear. Two days after the "take," the right ear began to swell, and a crusted lesion like that on the arm appeared. As presented, the ear and adjacent part of the neck were swollen, erythematous and tender. A crusted ulcer was observed on the ear, and the cervical lymph nodes were enlarged on the right side.

DYSTROPHIES OF CONGENITAL SYPHILIS. Presented by DR. COLE and DR. DRIVER.

R. L., a man, aged 26, presented a rather characteristic facies, with prominent frontal bossae, keratitis, Hutchinsonian teeth and a perforated soft palate. There

was central deafness. The Wassermann reaction was negative, and the spinal fluid did not show any abnormality.

CONGENITAL SYPHILIS. Presented by DR. COLE and DR. DRIVER.

J. O., a negro, aged 8 months, was born while his mother had secondary syphilis. The parietal bossae were prominent, and partial alopecia was noted in the sides and back of the scalp, with a moplike tuft of hair at the vertex. Annular papular lesions were observed on the chin and at the corners of the mouth. The Wassermann reaction of the blood was strongly positive; the spinal fluid was normal.

DERMATITIS MEDICAMENTOSA (ARSPHENAMINE DERMATITIS). Presented by DR. COLE and DR. DRIVER.

G. H., aged 47, a truck driver, five weeks previous to examination noticed a pruritic erythema in the cubital fossae, following six weekly injections of some preparation of arsphenamine. A seventh injection had then been given, and three days later a generalized eruption appeared, with fever and diarrhea. Many large subcutaneous abscesses had developed.

DERMATITIS EXFOLIATIVA. Presented by DR. COLE and DR. DRIVER.

W. M., a farmer, aged 78, first noticed a scaly pruritic eruption on the legs two years previous to presentation. The eruption rapidly became general in distribution. The etiology remained obscure, as the blood was normal and the sections did not show evidence of leukemia.

CUBA DERMATOLOGICAL ASSOCIATION

R. QUERO, M.D., *Secretary*

Monthly Meeting, Aug. 2, 1928

PURPURA. Presented by DR. PARDO-CASTELLO.

A colored woman, aged 24, complained of headache and sore throat one week before presentation, almost immediately numerous petechiae scattered all over the body, small papular and vesicular lesions and epistaxis appeared. The stools were bloody. There was a rise in temperature, which ranged between 38 and 39 C. (100.4 and 102.2 F.). At the time of presentation the patient was in a state of profound sepsis, with delirium and high fever. The mouth was partly open from which exuded serohemorrhagic fluid; the lips were enormously swollen and covered with bloody crusts. Petechiae and ecchymosis were abundant, particularly on the face and chest. The Wassermann reaction was negative. The blood count showed: red blood cells, 5,358,000 white blood cells, 7,100; polymorphonuclears, 63 per cent; lymphocytes, 25.5 per cent; mononuclears, 9.5 per cent; basophils, 1 per cent; eosinophils, 0.5 per cent and Turk's cells, 0.5 per cent. The coagulation time was seven minutes. The blood cultures were negative.

DISCUSSION

DR. PARDO-CASTELLO: I have presented this case particularly to illustrate how the lesions of purpura and those of erythema multiforme intermix and form a symptomatic complex. At the last meeting, Dr. J. J. Mestre presented a case of erythema multiforme which several members considered as a case of purpura, because at the moment of presentation the patient happened to show more petechiae than inflammatory lesions of the erythema group. This case presents just the

opposite picture, being a case of purpura in which the lesions of erythema multiforme are apparent. In my opinion, simple erythema, urticaria, the group of the erythemas and purpura are almost always due to the same or similar toxic or infectious agents and should be grouped as one syndrome.

DR. QUERO: In my opinion, the clinical picture in this case is that of purpura. The diagnosis in all cases should be made according to the predominating cutaneous lesions.

DR. CASTRO: I agree with the diagnosis. I think that from an etiologic point of view Dr. Pardo-Castello's conception is the right one, but clinically these cases should be diagnosed according to the lesions of the skin present.

DR. SAENZ: I wish to congratulate Dr. Pardo-Castello on the presentation of this interesting and unusual case. The condition in this case is due to a tonsillar infection and a subsequent septicemia, the purpura being the expression of the infection on the blood vessels.

GOLD DERMATITIS. Presented by DR. SAENZ.

A white man, aged 42, a Cuban, had suffered from psoriasis for the past fourteen years. Treatment with a gold compound was instituted in doses of 0.005, 0.008, 0.01 and 0.01 every week. After the fourth injection the patient complained of headache, fever and intense pruritus; an erythematous and vesicular dermatitis rapidly developed which later became eczematoid. Examination of the urine showed 2 Gm. of albumin per thousand cubic centimeters and red blood cells. The patient improved under local treatment and intravenous injections of sodium thiosulphate.

DISCUSSION

DR. PARDO-CASTELLO: I have seen a few cases of gold dermatitis. I wish to say that in several of my cases the lesions commenced on the lips several days before the skin was affected.

DR. FERRER: I have used sodium aurothiosulphate almost exclusively and have not had a case of dermatitis. I wish to know whether this has been due to my good luck or to the less toxic properties of the preparations I have used.

DR. SAENZ: I am sorry to say that sodium aurothiosulphate as well as the other salts of gold have been the cause of the dermatitis in some of my cases. In fact, my first case of gold dermatitis was in a patient treated with sodium aurothiosulphate. According to some German observers, a marked eosinophilia sets in some time before the appearance of the dermatitis. Repeated blood counts may be of some service in avoiding the dermatitis, when an increase of the eosinophils is shown.

INGUINAL ADENITIS. Presented by DR. QUERO.

A white man, aged 26, had suffered from inguinal adenitis for three months. Both inguinal regions were occupied by enlarged glands the size of walnuts, some of which were fluctuating. Puncture of these glands produced a white, creamy pus. When guinea-pigs were inoculated with this pus, the results were negative. The blood count showed 10 per cent of eosinophils. The results of the Wassermann and tuberculin tests were negative. The diagnosis in this case was lymphogranulomatosis inguinalis, Nicolas and Favré.

A colored man, aged 30, presented a number of enlarged glands the size of almonds on both inguinal regions. The results of the Wassermann and tuberculin tests were positive. Examination of the lungs showed moderate infiltration of the apexes. The blood count showed 8 per cent eosinophils. The diagnosis in this case was tuberculous adenitis.

DISCUSSION

DR. QUERO: These two patients have similar conditions; in both the history is about the same. The diagnosis has been made only after a thorough study of the pathologic changes and the laboratory observations.

DR. FERRER: I see patients of this sort frequently. In my opinion, the diagnosis of lymphogranulomatosis inguinalis of Nicolas and Favré cannot be made until after a complete investigation of the conditions in question. I have had five or six cases in which the diagnosis of lymphogranulomatosis seemed certain, but in which we finally could isolate Ducrey's bacilli in Bedreska's egg medium.

DR. PARDO-CASTELLO: Undoubtedly cases of inguinal adenitis are confusing, and at times it is difficult to diagnose the condition. The second patient presented by Dr. Quero was in my syphilis ward some time ago suffering from a primary lesion. He did not tell this part of his history to Dr. Quero. In my opinion, the microscopic section in this case shows only chronic inflammation.

A CASE FOR DIAGNOSIS. Presented by DR. ROSELL and DR. RIO.

A white man, aged 17, a Cuban, of Syrian parents, had had severe influenza in 1919. During convalescence thick, heavy crusts developed on the scalp. When these crusts were removed, the hair fell out and atrophic, superficial scars were apparent over the scalp. These atrophic, alopecic areas were about from 2 to 4 cm. in diameter, irregularly shaped and distributed. There were larger areas of alopecia on both legs. A typical patch of alopecia areata had recently appeared on the left side of the scalp, which brought him to seek advice because he feared that the lesions would spread and produce further loss of hair.

DISCUSSION

DR. FERRER: The condition is difficult of diagnosis. Brocq's pseudopelade is of chronic evolution, taking years to develop into a moderate sized area. I consider this condition as alopecia cicatrisata subsequent to an acute inflammation of the scalp during an attack of influenza.

DR. SAENZ: The name of pseudopelade carries with it the lack of known etiology. I have seen about six cases of this condition, and I think that the appearance of the scalp of this patient is the same as in pseudopelade.

DR. PARDO-CASTELLO: I rather favor the diagnosis of alopecia cicatrisata innominata, because in Brocq's cases the evolution is slow and the areas of alopecia grow slowly but surely. In this case there has been no enlargement of the alopecic plaques for the past nine years.

LICHEN PLANUS AND LICHEN SPINULOSIS. Presented by DR. FERRER.

A white child, aged 11 years, a Cuban, noticed the lesions on the legs for the first time about four months before presentation. They consisted of pointed, hard, corneous papules, protruding from the pilosebaceous orifices. These papules gradually spread over the rest of the skin, until the condition became generalized. There was intense pruritus from the beginning. There were also typical, violaceous, flat papules of lichen planus, arranged in patches and lines on the legs, arms and neck. There were no lesions on the mucous membranes. Some small, tense vesicles were noted. Sections showed the typical structure of lichen planus plus marked hyperkeratosis, especially of the follicles.

DISCUSSION

DR. FERRER: In my opinion, the interesting features of this case are in the histologic picture. Even at the points at which the clinical lesions were those of keratosis pilaris, the sections show changes typical of lichen planus.

BUCCAL LICHEN PLANUS. Presented by DR. GONZALES PERIS.

A young colored woman, presented whitish, interlaced, reticular patches of lichen planus in both cheeks toward the posterior end of the maxillae and on

the dorsum of the tongue. She said that the lesions had been present for a year, and that she had never had any lesions of the skin. The patient had been treated with intravenous injections of mercuric salicylarsanate and intramuscular injections of a French organic arsenical compound. After this treatment, the buccal lesions somewhat faded, but a pigmentation had appeared.

DISCUSSION

DR. FERRER: In the absence of cutaneous lesions, lichen planus of the mucous membrane of the mouth is not so rare. Statistics show that 20 per cent of patients with lichen planus present the disease only in the mouth.

DR. PARDO-CASTELLO: I wonder whether the pigmentation present in this case is due to the natural evolution of lichen planus or to the arsenical treatment used.

DR. QUERO: I have seen patients with lichen planus who have been treated with carbon dioxide snow develop pigmentation following the application of this agent. Lortat-Jacob suggested that the local action of the carbon dioxide snow may establish the circulating arsenic in the tissues.

MACULO-ANESTHETIC LEPROSY. Presented by DR. GONZALES PERIS.

A colored child, aged 12 years, born in Cuba, presented a whitish, almost square patch, about 12 by 8 cm. on the anterior aspect of the left forearm, in which area the sensations were abolished. The condition had been present for a year. There was a small rounded scar, the result of a cigaret burn, which the child had suffered unnoticed. There were no other symptoms of leprosy. Hansen bacilli were not present on repeated investigations.

DISCUSSION

DR. GONZALES PERIS: This case is one of the monosymptomatic leprosy, which condition often passes unnoticed.

PARAKERATOSIS PSORIASIFORMIS. Presented by DR. PELAEZ and DR. FERRER.

M. G., a colored woman, aged 45, said that she had noticed the condition of her skin about six months prior to presentation. The lesions were small, circular, red patches covered with small scales and were extremely itchy. The spots were first localized on both legs but later spread to the rest of the body. On examination, the patient had numerous erythematosquamous patches, varying from 1 to 10 cm. in diameter. They were situated on the extensor aspects of both legs and arms and also on the dorsum and chest. They resembled closely the lesions of psoriasis, when the scales were curetted, however, there was no bleeding. Sections showed thickening of the corneous layer, parakeratosis, acanthosis and edema of the malphigian layer. The papillae were narrow and long; perivascular round cell infiltration was present.

DISCUSSION

DR. FERRER: This type of lesion of the skin was usually diagnosed as psoriasis until Brocq separated the lesions under the name of parakeratosis psoriasiformis. It should be noted that the pathologic changes are similar to those of psoriasis.

DR. PARDO-CASTELLO: The only point of differentiation concerning the pathologic changes is the absence of the elongation of the papilla, as is seen in psoriasis.

DR. SAENZ: Radiotherapy is the most satisfactory treatment for these conditions.

DR. QUERO: Civatte demonstrated that there are no differences between the papillary lesions of psoriasis and those of parakeratosis psoriasiformis.

MACULO-ANESTHETIC LEPROSY AND BLASTOMYCOSIS CUTIS. Presented by DR. CASTRO-PALOMINO.

An elderly negro, born in New York, who had been a sailor, had lived in Cuba for the past five or six years. He presented an achromic patch on the right cheek, surrounded by an erythematous halo, with the border somewhat elevated and infiltrated. The lesion was anesthetic. The right cervicofacial nerve corresponding to the superficial cervical plexus was markedly thickened. The patient had a granulomatous ulcer on the right leg, which had been present for four years. Hansen bacilli were demonstrated. Round cell yeasts were recovered from the lesions of the leg and foot.

STROPHULUS. Presented by DR. PELAEZ.

A mulatto boy, aged 4 years, had suffered from itchy papular lesions for two years before presentation. The patient was sometimes better and sometimes had severe relapses. The cutaneous lesions were situated on the extensor surfaces of the arms and legs. They were urticarial papules surmounted by small vesicles. There were numerous minute whitish scars and small pigmented spots. The Wassermann reaction was negative. Many therapeutic measures had been used without improvement to the patient.

DISCUSSION

DR. PARDO-CASTELLO: I have treated patients with some of these stubborn conditions with a vaccine made of the flora of the large intestine. In adults, I begin with an initial dose of 50,000,000 of the combined germs and increase as high as 1,000,000,000 per cubic centimeter. The reactions are severe.

GENERALIZED SYPHILITIC ALOPECIA AND LEUKODERMA. Presented by DR. ROSELL.

A white man, aged 21, had a syphilitic chancre five months before presentation. He had received only local treatment. Four months later his hair began to fall out. On examination, the patient presented typical patches of syphilitic alopecia of the whole scalp, eyebrows, arms, trunk and legs. The patches of alopecia varied from 1 to 5 cm. in diameter. There was an extensive leukomelanoderma of the usual reticular type on the neck and upper parts of the chest and back. The results of the Wassermann and Kahn tests were strongly positive. There were no other cutaneous lesions of syphilis.

LICHEN PLANUS. Presented by DR. TIANT.

E. F., a white man, aged 23 years, had noticed several small white papules on the glans penis two months previous to presentation. Gradually, the skin of the entire body became covered with dark red, polygonal papules, typical of lichen planus. The mucous membrane of the mouth showed whitish lesions. The patient received one x-ray irradiation over the bulbar region.

DISCUSSION

DR. SAENZ: This is one of the most extensive cases of lichen planus that I have seen. I think that the cutaneous lesions will improve under roentgen treatment of the spine, but not those of the mouth. I would suggest the use of ultraviolet light for the mucous lesions.

SYRINGOMYELIA. Presented by DR. PARDO-CASTELLO.

A negro, aged 18, born in Cuba, had a marked deformity of the trunk produced by an extreme cervicodorsal cyphosis and scoliosis. There were anesthesia and thermo-analgesia on both arms and legs, atrophy of the muscles of the shoulder and of the arms and hands, especially on the left side. The beginning muscular

atrophy on the legs resulted in a goose-step walk. The knee reflexes were absent. The Wassermann reaction was negative. Hansen bacilli were searched for but were not found. The case was presented for differential diagnosis with leprosy.

CHRONIC PEMPHIGUS. Presented by DR. TIANT.

V. G., aged 65, a white man, a Spaniard, said that he had had a skin disease for one year. It had been noticed first in the form of blisters on the face and in the mouth. Since then, crops of large bullae had appeared from time to time, almost continuously all over the body. These bullae contained bloody serum. They broke easily, appearing covered by dark red crusts. Nikolsky's sign was present. The general health of the patient was excellent. The blood count was normal. The fluid of the bullae showed 68 per cent of lymphocytes.

PAPILLOMATOSIS RETICULATA ET PIGMENTATA (GOUGEROT). Presented by DR. SAENZ.

A white girl, aged 14 years, born in Cuba, was said to have presented a skin disease for the past six years. The condition had spread gradually from the neck, where it had started, toward the chest and breasts. Later, similar lesions had appeared in the groins, bend of the elbows and knees, back of the hands and on the face. They consisted of verrucous papules, first whitish and later dirty gray. They were covered with small, powdery scales. In some locations the papules coalesced to form patches or irregular verrucous surfaces, surrounded by small typical lesions.

DISCUSSION

DR. PARDO-CASTELLO: I agree with the diagnosis. I think that the case presented by me at a former meeting for diagnosis, in which the diagnosis of epidermodysplasia verruciformis was suggested, is entirely different from Dr. Saenz's patient. In my case the lesions were entirely different in color, form and location.

DR. FERRER: I agree with the diagnosis. If I had seen the case before reading Gougerot's article, I would have diagnosed this condition as pigmentary nevus.

LICHENOID PIGMENTARY SYPHILIS. Presented by DR. PELAEZ.

A colored woman, aged 36, had an eruption of the skin for six weeks. The skin of the whole body, except the palms and soles, was covered with small, flat topped, polygonal, dark red papules about 3 mm. in size. The rash resembled closely that of lichen planus. The Wassermann reaction was strongly positive. Sections were made and showed typical lesions of early syphilis. There was a generalized enlargement of the glands.

GRANULOMA ANNULARE. Presented by DR. SAENZ.

A white woman, aged 61, born in Cuba, had typical granuloma annulare of the dorsum of the right hand. The condition had existed for three months. The Wassermann reaction had been strongly positive. The results of the Pirquet tuberculin test were also positive.

SYSTEMIC BLASTOMYCOSIS. Presented by DR. PARDO-CASTELLO.

The patient, presented at the first meeting of the Association, had been treated with intravenous injections of tartar emetic. After two months, all the lesions were healed. The patient had gained in weight and had all the appearances of a healthy person. More than fifty injections had been given intravenously without any untoward reactions.

PITTSBURGH DERMATOLOGICAL SOCIETY

Regular Meeting, Sept. 20, 1928

G. J. BUSMAN, M.D., *Chairman, Presiding*

FACTITIOUS DERMATITIS. Presented by DR. NORRIS.

M. H., a man, aged 60, married, was seen in April, 1928, because of a dermatitis on the right cheek near the ear and on the right side of the chest near the nipple. The latter lesion first appeared following a burn from an electric wire. This crusted over but would not heal. Two or three weeks after the burn, a "blister" occurred on the right cheek. The lesions improved under local applications but did not entirely heal.

DISCUSSION

DR. HOLLANDER: I consider this case one of factitious dermatitis. The reasons for this diagnosis are based on several things observed. There are numerous lesions over the face and on the anterior wall of the chest. The most prominent is the lesion on the face about the right ear. The configuration of this lesion is angular at one end and slightly rounded below. A thin, dry crust covers it — the type one sees following ordinary trauma. The other lesions on the face, which are on the left side, are scars which are left after ordinary and superficial trauma, some rounded, some rectangular.

The history of the lesion on the chest, which blisters, almost heals, then blisters again, and repeatedly goes through this cycle, is certainly significant of recurring trauma. As the lesions do not conform with any one dermatologic condition; as the patient seems more than pleased to be considered a dermatologic curiosity, and in view of the described configuration, I cannot see what other diagnosis can be established.

DR. GUY: I agree with Dr. Hollander. The man thoroughly enjoyed exhibiting the lesions which did not conform to any dermatologic entity. He was apparently neurotic, and probably the condition was precipitated or suggested by the lesion originally produced by minor trauma.

TERTIARY SYPHILIS. Presented by DR. HOLLANDER.

W. F. P., aged 38, a man, presented irregular, diffuse, punctate scarring on the right side of the forehead and under the inner canthus of the right eye. The individual scars were deep and anemic, and the skin surrounding them showed a fair amount of telangiectasis, although the scars were individual pits. The entire picture had a crescentic configuration. This scarring was the result of small papulonecrotic lesions which began four years before presentation. To the left of this scarring there were new lesions which began about six weeks before examination and which the patient claimed were similar to the type which caused the scarring. These lesions were punched out, deep, necrotic papules, covered by a slight, brownish scale, not associated with pain or itching.

The patient was presented because of a previous diagnosis of herpes zoster which had been made by a number of prominent physicians.

The laboratory reported a 4 plus Wassermann reaction and a 4 plus Kahn reaction. The luetin test was positive; one injection of arsphenamine had caused involution of the lesions.

DISCUSSION

DR. GUY: It is conceivable that originally the man had had herpes zoster, and that the syphilitic process had localized in an area of lowered resistance.

DR. HOLLANDER: Over a period of four years this patient has been treated without recognition. The configuration and type of scar are diagnostic of syphilis.

DERMATITIS HERPETIFORMIS. Presented by DR. FREDERICK AMSHEL.

J. G., a man, aged 66, was first seen two weeks before presentation, with an eruption that had recurred at intervals for more than thirty years. He presented an erythematous, vesicular, and in places pustular eruption on all parts of the body, but chiefly on the buttocks and lower extremities. There were a few similar lesions on the back and chest. Over the sacrum and the outside of the lower one third of the legs there was a hard, nodular, rough and scaly eruption. The entire eruption was pruritic, as was evidenced by scratch marks.

The eruption on the buttocks and lower extremities had decreased, but during the past week there had been an acute exacerbation on the abdomen and back. It consisted of an erythematous, papular, annular, wheal-like eruption. Interspersed here and there were vesicles varying in size from that of a pinhead to that of a small pea. The itching and burning were severe and the patient was unable to get much rest. He had had practically every form of internal and external treatment prescribed for this disease but nothing seemed to give him any relief.

DISCUSSION

DR. HOLLANDER: I hesitate in accepting the diagnosis of dermatitis herpetiformis. The patient presents a great many urticarial wheals over the lower portion of the abdomen and about the buttocks. He told me that this is what had caused him annoyance for the greater part of his life. The entire body seems to be affected. The skin is dry and harsh, like the skin found in patients who have suffered from a generalized dermatitis. The lesions about the elbows and buttocks, on the basis of which I believe the presenter made his diagnosis, to me were nothing more than scratched urticarial papules. I fail to find scarring and pigmentation in this patient, and as this process has gone on from early childhood, one would assume that if this is a case of dermatitis herpetiformis, these last mentioned factors would be pronounced.

I believe that the diagnosis of dermatitis herpetiformis should be left to cases in which the lesions conform to a certain amount of grouping, to the production of the sequelae mentioned. It might be that it is hair-splitting to differ with the presenter's diagnosis and call this a chronic urticaria with an anaphylactic dermatitis.

DR. AMSHEL: I agree with Dr. Hollander in that the new eruption looks like urticaria. The picture is marked at the present time to an erythema from an alpine light exposure. The distribution, history and character of the eruption is that of dermatitis herpetiformis.

CARCINOMA OF THE HAND. Presented by DR. HOLLANDER.

Mr. D. A. C., aged 46, presented a large, ulcerating, grayish-brown, uneven lesion with firm, hard, nodular borders and central ulceration on the side of the left hand. The condition began from a small keratotic patch similar to the type to be seen on the right hand. Activity in the lesion began about eight months before examination, and since that time had become progressively worse. There was glandular enlargement in the axilla.

This patient was presented during the latter part of 1926 as showing an example of carcinoma in a tar worker. The lesion then presented was on the right hand. It was desiccated and had not progressed since that time. It was interesting to note that what appeared clinically to be a squamous cell type of carcinoma resulted from tar irritation. Some of the clinical features were not well defined because of the implantation of radium emanation within six days of presentation.

DISCUSSION

DR. HOLLANDER: This patient was presented two years ago at which time he had a black keratotic area on the opposite hand that had been diagnosed as a precancerous lesion produced by tar irritation. At that time there was considerable

doubt as to the propriety of this diagnosis. There is no question in the mind of any one present as to the diagnosis of the lesion which has occurred on the opposite hand. The original lesion was desiccated successfully.

LYMPHATIC LEUKEMIA WITH SKIN LESIONS. Presented by DR. SCHWARTZ and DR. BUSMAN.

J. Mc., a woman, married, aged 53, on July 31, 1928, presented a diffuse, densely studded, follicular, papular eruption involving the entire trunk, neck and extremities. The condition was more pronounced around the abdomen and back. The individual papules were covered with a definite horny spine, but at no time were there suggestive lesions on the proximal phalanges. The lesions around the abdomen were shiny and glistening and were of a lichenoid character. The liver was palpable at the costal margin; the spleen seemed enlarged only on percussion. The condition had started two years before presentation, and had gradually become more extensive. There was a mild pruritis.

On June 4, 1928, the blood count showed: red blood cells, 4,930,000; hemoglobin 98 per cent; white blood cells, 20,900; the differential count showed: polymorphonuclears, 22 per cent; lymphocytes, 77 per cent; basophils, 1 per cent.

On July 31, the blood revealed: white blood cells, 24,400; polymorphonuclears, 12 per cent; eosinophils, 1 per cent; small lymphocytes, 83 per cent; large lymphocytes, 3 per cent, and transitionals, 1 per cent.

With the administration of one-half skin unit of unfiltered x-rays plus empiric treatment weekly, the number of white blood cells had diminished. On September 13, the white blood cells numbered 12,300; the differential count showed: polymorphonuclears, 40 per cent; eosinophils, 2 per cent; small lymphocytes, 50 per cent; large lymphocytes, 3 per cent, and transitionals, 5 per cent. A smear also showed numerous fragments of disintegrated large mononuclears.

DISCUSSION

DR. HOLLANDER: I believe that this is one of the most interesting dermatologic pictures presented so far at the Pittsburgh Dermatological Society. On account of the blood picture, and on account of the presence of a large, palpable and freely movable gland in the anterior cervical region right above the left clavicle, I would consider the condition lymphatic leukemia associated with a generalized papular dermatosis. The individual lesions are brownish yellow; they have a peculiar sheen almost like that of lichen planus. The entire body, however, looks reddened and inflamed. Apparently, there was a great change in the blood picture after the superficial dose of x-rays which was given over the entire body. It occurs to me that the same result could have been obtained if the liver and spleen alone had been irradiated. I would strongly urge the presenter to report this case in detail with biopsy observations.

LICHEN PLANUS (?). Presented by DR. SCHWARTZ and DR. BUSMAN.

R. S., a woman, aged 35, married, on July 18, 1928, had about six widely scattered corymbose lesions. The lesions were present on the right thigh, the left knee, either forearms and the left side of the neck. The lesions consisted of a single raised violaceous papule of about the size of a split-pea with a dozen or more smaller satellite papules the size of a pinhead, the entire plaque being about 1 inch (2.5 cm.) in diameter. The central papules of the right thigh were verrucous and suggested a hypertrophic lichen planus. There were no lesions of the mucous membranes.

The condition at the time of examination was of one and one-half months' duration. There were no constitutional symptoms. The temperature was 99.4 F. Urinalysis showed albumin, but was otherwise negative. The Wassermann and Kahn reactions of the blood were negative. The second provocative Wassermann reaction was negative after two weeks. The patient gave a history of repeatedly taking Alophen pills for constipation. The diagnosis at that time favored a

corymbose syphilis or a phenophthalein eruption. The lesions have responded slowly to eliminative treatment and at present present only the central papule. There was, however, a suggestive, new, flat, shiny, lichen planus-like papule on the back of the left hand.

DISCUSSION

DR. HOLLANDER: It is difficult to add anything to the discussion of a case in which the diagnostic possibilities have been so thoroughly exhausted as they are in this case. I frankly confess that the appearance of these lesions left me entirely in the dark as to their nature, but of the four possibilities mentioned, I believe that the diagnosis of dermatitis medicamentosa is the best one. Neither one of the single lesions on the dorsum of the hands (and these lesions are new ones) can be diagnosed as lichen planus. This is also true of the lesions on the inner surface of the thigh.

MINNESOTA DERMATOLOGICAL SOCIETY

D. D. TURNACLIFF, M.D., *Secretary*

Oct. 3, 1928

H. E. MICHELSON, M.D., *President, Presiding*

PEMPHIGUS VULGARIS. Presented by DR. MICHELSON.

A business man, aged 54, was presented with numerous large flaccid bullae which had appeared suddenly on the trunk and face. There were large denuded areas on the oral mucosae. The patient's past history was negative, and no exciting factors could be determined. The lesions in the mouth had interfered with nutrition to some extent; otherwise, the patient was in a splendid condition. Treatment had consisted of five injections of tryparsamid without any apparent effect.

DISCUSSION

DR. GAGER, St. Paul: What is your impression of the tryparsamid?

DR. MICHELSON: The patient has received five injections of tryparsamid, but he is becoming progressively worse. He is losing weight and becoming extremely nervous.

DR. SWEITZER, Minneapolis: We had a similar case at the hospital. The patient was up and about for a month or six weeks. His mouth was not involved so much as in this case. He lived about a month after admittance to the hospital.

MORPHEA. Presented by DR. MICHELSON.

A man, aged 34, was presented with a plaque about 8 inches (20.32 cm.) in diameter on the anterior tibial region, which was yellowish white and of cartilaginous consistency. There was a deeply pigmented, brown colored border. Treatment had not been instituted.

MORPHEA. Presented by DR. MICHELSON.

A woman, aged 55, had two plaques on the anterior abdominal wall about 4 inches (10.16 cm.) in diameter, which were chalky white and hard. The diagnosis of morphea was confirmed microscopically.

DISCUSSION

DR. FREEMAN, St. Paul: I did not question the diagnosis, but the lesion on the leg is atypical of morphea. The lesion on the abdomen of the other patient is, in my opinion, typical of morphea.

DR. SWEITZER, Minneapolis: I do not see anything so very atypical about the lesion on the leg. I think that the appearance is due to the difference in location. I think that they are both scleroderma. I had seen the patient before tonight and concurred in the diagnosis. I do think there are few lesions in that location; I have seen very few on the lower part of the leg, but I think that the difference in color is due to the location.

DR. ARMSTRONG, St. Paul: I think that the difference in pigmentation is due to the location.

DR. OLSON, Minneapolis: Besides an atypical morphea, there is one other disease to be considered in this case, and that is tuberculid. The patient says that the disease started as an erythema nodosum, which is at times in reality an erythema induratum. The patient may possibly have a superficial tuberculid en plaque.

PSORIASIS VULGARIS OCCURRING IN FOUR MEMBERS OF THE SAME FAMILY. Presented by DR. MICHELSON.

A mother and three children were presented, all having typical lesions of psoriasis vulgaris.

DISCUSSION

DR. GAGER, St. Paul: The late Professor Kyrle said that he was under the impression that psoriasis might possibly be contagious; that it might have a bacteriologic etiology. He said he was coming more and more to that impression because he saw patients who developed psoriasis in the hospital, which fact gave him the impression that the condition might be contagious.

DR. MICHELSON: I have frequently seen mother and child with psoriasis, but this is the first time I have seen a family of four with psoriasis.

DR. GAGER: If psoriasis is a disease due to a micro-organism, it would probably require some particular soil or susceptibility, which might run in a family.

DR. FREEMAN, St. Paul: Dr. Max Joseph, if I remember correctly, once made the statement that one never sees psoriasis in a person who died from some lingering disease as, for instance, typhoid. During the course of the long sickness the psoriasis will disappear only to recur after the patient has regained his health and strength.

DERMATITIS HERPETIFORMIS. Presented by DR. MICHELSON.

A man, aged 42, whose previous cutaneous history was negative, said that the present eruption appeared suddenly in patches over the shoulder blades, lower part of the back and arms. The eruption consisted of grouped lesions which were made up of wheals, papules and closely studded vesicles. There were a few isolated bullae over the back, but the mucous membrane was clear. Itching and burning were almost unbearable. General examination did not reveal any abnormalities.

LUPUS ERYTHEMATOSUS DISCOIDES OCCURRING IN BROTHER AND SISTER. Presented by DR. MICHELSON.

Two patients, aged 27 and 18, respectively, with no family history of tuberculosis, were presented with typical lesions of lupus erythematosus on the cheeks. Eight injections of a gold compound had been administered with a marked effect on the lesions.

DISCUSSION

DR. SWEITZER, Minneapolis: I had one patient who had a hypertrophic lupus on the side of the face. He has made a remarkable improvement. The lesions are not completely gone but are practically all healed. It was the verrucous type of infection. I think he has had twenty-five injections of a gold solution. We gave him twenty-one, stopped for a month, and then started him on the same treatment.

DR. ARMSTRONG, St. Paul: I should like to ask if it is not the impression here that acute disseminated lupus erythematosus is getting to be ordinary compared to what it used to be? I saw several cases this spring and summer. It used to be a rare condition.

DR. SWEITZER: We had a technician at General Hospital who had the largest ulcer from erythema induratum that I have ever seen. It went almost around the leg. We gave her arsenic treatment. The ulcer receded to some extent but did not heal up. She came back some time ago and had an ulcer about as big as the palm of my hand. She received ten injections of a gold solution, and the last time I saw her the lesion was the size of a fifty-cent piece.

DR. SHAPIRO, Duluth: I had a boy, aged 9, with a typical distribution who died. I spoke to Professor Kren in Vienna about the case, and he doubted the diagnosis because he said the condition occurred only in females. Dr. Goeckermann said they had had cases in males in their clinic.

DR. ARMSTRONG: I had a boy 11 or 12 years of age who died from the condition. The patients I saw this spring and summer, however, were females.

DR. MICHELSON: For my part, I believe that one should not overdo the treatment with gold. I give six or eight injections, and if I see no result, I follow the suggestion of Professor Bloch, who alternates the injections of gold solution with injections of neoarsphenamine, but I do not think that one should continue the treatment with the gold preparation indefinitely.

ICHTHYOSIS, KERATOSIS PILARIS AND ALLERGIC DERMATITIS. Presented by DR. SHAPIRO.

Miss B. B., aged 19 years, has had the condition most of her life and the last attack for about one month. The patient has a fine seborrhea of the scalp; the face is dry and scaly, the scales being fine, whitish and closely adherent to the skin with some crusts in places. The affected area is not sharply marked off from the surrounding skin. The skin is extremely dry, and there is marked evidence of itching. The arms, especially over the elbow regions and flexor surfaces, look extremely reddened and scaly with some papular lesions predominating. The backs of the fingers show cracks. The lateral surfaces of the arm show marked keratosis pilaris, while the legs show a marked degree of ichthyosis. There is a good deal of itching here.

DISCUSSION

DR. SHAPIRO: This girl is a nurse in a hospital. She goes along for a while and then has an exacerbation. She is here mostly for suggestions as to treatment.

DR. SWEITZER: I have had a number of cases that were the exact counterpart of this one, and they are most discouraging as far as treatment goes. I have tried changes of diet, lamp and other measures. The patients get better for a while and then have a relapse. One nurse got better when she went home and then had a relapse when she came back. I saw her about three months ago and she still had the disease. I have had some patients in the hospital in which the condition looked similar to the one in this case, and I have given them the full-bath treatment. One man was sensitized to horses. In the hospital he was given the full-bath treatment and recovered. He went back to his work with horses and contracted the disease again.

EPITHELIOMA OF THE TONGUE. Presented by DR. SHAPIRO.

Mr. E. L., aged 64, has had a lesion on the tongue for two weeks. On the left side of the tongue on the base and running on to the floor of the mouth, there is an elevated area most of which is ulcerated, fairly hard to the touch and covered by a grayish white, tenacious membrane. When this membrane is scraped, bleeding occurs quite readily. The patient has no sensation of pain and did not

know of the presence of the lesion until two weeks before presentation. The patient's color is good, and he has not lost any weight. A biopsy shows squamous cell carcinoma. There are no enlarged glands in the neck.

DISCUSSION

DR. SHAPIRO: This man says he noticed the lesion only two weeks ago. It seems extraordinary that a lesion could get so large in so short a time. The question comes up as to treatment. I understand that Simpson uses seeds. O'Leary, of the Mayo Clinic, said that New, who does most of the work on the mouth there, is opposed to the use of radium for lesions of the mucous membrane. He uses excision and cleans out the neck whether or not glands are felt. Quick, at the Memorial Hospital in New York, uses treatment with seeds locally and radium for the neck and removes the glands only when they are palpable. He claims that surgical intervention is absolutely out of the question in carcinoma of the tongue. Thus two authorities who probably do the most work in this line differ markedly in their treatment.

DR. MICHELSON, Minneapolis: In the Cancer Institute I have had the opportunity to observe a number of cases of cancer of the buccal mucosa. I have seen some splendid temporary results, but I believe that the prognosis is always bad, regardless of the form of treatment.

DR. SHAPIRO: I should like to call attention to what Ewing says in regard to the glands. He has a different idea about removal; he thinks that the glands are barriers to the spread of carcinoma and is much opposed to their removal, unless they are fairly palpable and hard. That is an opinion that I have never seen advocated, and still, coming from a man like Ewing, one must give some consideration to it.

LESIONS ON THE HANDS AND NAILS. Presented by DR. SHAPIRO.

Mr. A. C., aged 37 years, has lesions located on the backs of both hands and on the backs of both feet. These are of five years' duration. The lesions consist of papules varying in size from that of a pinpoint to that of a split pea. There is a great deal of normal skin scattered in between the papules. These papules are red and markedly raised from the surrounding skin. There are no vesicles or pustules, and scar formation is not present. There are no scales, and the patient says that he has never seen any. The area involved seems to be sharply marked off from the surrounding skin in most places; in fact, the base of the lesions appears highly infiltrated, ridgelike and prominent.

DISCUSSION

DR. SHAPIRO: This patient had a fungus lesion of the hand and has a platelike division of the nails with crumbling. He has had this for three years and has handled acids for two years. One thumb is free from infection. The lesion of the skin on the back of the hand cleared up after applications of ordinary Whitfield's ointment.

DR. MICHELSON, Minneapolis: I think that this condition is an onycholysis. I would try packing under the nails with diachylon ointment and ordering the patient to wear finger cots.

LINEAR NEVUS. Presented by DR. SWEITZER.

A girl, aged 17, presented a light brown linear nevus on the right side of the neck.

SYPHILIS. Presented by DR. SWEITZER.

A man, aged 31, presented a fading macular eruption on the body and a circinate papulosquamous eruption on the penis. Condylomas were present in the dual region.

PHILADELPHIA DERMATOLOGICAL SOCIETY

CARROLL S. WRIGHT, M.D., *Secretary*

Regular Meeting, Oct. 5, 1928

SIGMUND GREENBAUM, M.D., *Presiding*

TUBERCULOUS ABSCESSES. Presented by DR. MARKOWITZ.

A child, aged 2 years, who was presented at the April, 1928, meeting as having a case of tuberculous abscesses of the skin, showed on later presentation, lesions which were almost healed. Dr. Harkins of the Research Institute of Cutaneous Medicine, who performed a biopsy in April, was puzzled by the absence of *Bacillus tuberculosis*. Histologically, the lesions were tuberculous. Sunshine and good food, may have been responsible for the improvement.

DISCUSSION

DR. WEIDMAN: I want to call attention to the minute impressions on the surface of the lesions, which look like comedones. In the lesion on the thigh, however, I found minute but obvious sinuses. The condition interested me because I saw two cases of sebaceous cyst, both in negroes, in the tuberculosis wards at the Philadelphia General Hospital. Eventually a necropsy was performed, showing an advanced stage of tuberculosis. There were swellings near the joints of the fingers, which were thought to be tuberculous abscesses. One case had been studied carefully and several biopsies performed. Each disclosed the same condition — sebaceous cysts. At both necropsies the diagnosis of sebaceous cysts, not tuberculosis, was confirmed, as proved histologically. The fingers ordinarily are not the site of sebaceous cysts, and the fact that these cases were identical was more than a coincidence.

The question is whether the sebaceous apparatus is favorable to the development of cutaneous tuberculosis. A microscopic tubercle developing at the duct of the sebaceous gland may block it by pressure and lead to the accumulation of sebaceous material. There may be a tendency toward tuberculous change in the neighborhood of collections of fatty substance.

DR. WRIGHT: I suppose if gold salts had been employed they would have received the credit for the improvement.

TUBERCULOSIS CUTIS OR DISSEMINATED LUPUS VULGARIS. Presented by DR. GARNER for DR. STOKES.

A boy, aged 3 years, presented numerous erythematous papulonodular lesions scattered over the buttocks and extremities. The mother stated that these lesions developed two weeks after an attack of measles, seven months before presentation. His general health was good except for a slight limp and an enlargement of the right knee joint. A recent roentgenogram showed the joint to be normal. The Wassermann reaction was negative. Dr. Weidman reported that tissues removed from the thigh showed a typical tuberculous architecture. Confirmation of the diagnosis and suggestions for therapy are desired.

DISCUSSION

DR. WEIDMAN: The sections showed a definite tuberculous architecture. The endothelioid cells are placed high in the tips of the papillae; they are of the reticular type. The picture is almost identical with one of lichen scrofulosorum described by Wey in Dr. Hutton's textbook. I do not think that there is any doubt about the tuberculous nature of the disease. It is not miliary tuberculosis of the skin which is a terminal condition; this patient is certainly not in the last

stage of the disease. Clinically, the lesion resembles lupus vulgaris, whereas microscopically it is that of organisms of a lower grade of vitality. Some of this material should be tested in a guinea-pig; that, however, would be an academic procedure, for there is a definite white swelling of the knee, which is significant, of course, in the disseminated case. Adenopathy is not present, but there is slight tenderness over the inguinal region.

DR. KLAUDER: I agree with the diagnosis. The case is obviously one of acute disseminated tuberculosis. I am not especially familiar with acute disseminate lupus vulgaris, but it is appropriate to call it that. As to treatment, a physician from Zurich recommends the Kromayer lamp which brings about an acute reaction and gradual involution of the lesions. It has been described recently in one of the German journals. The method may be worthy of trial in this patient.

DR. GARNER: This disease was first described as "multiple lupus vulgaris" in 1894, by an Englishman, Philipson. Later, Adamson reported thirty-four cases. The most recent article in American literature is by Hazen in 1919, and the subsequent history of measles in this case is of the utmost significance; the sixty-four cases reported almost invariably followed acute exanthemas, particularly measles.

PSEUDOLEUKEMIA LEUKEMIDE. Presented by DR. KATZ from DR. SCHAMBERG'S clinic.

A married woman, aged 42, with two children living, complained of itching all over the body, of one year's duration.

Examination showed a generalized papular eruption on the trunk and extremities, faintly erythematous in color. Some of the lesions were excoriated, and others were covered with crusts, the size of a pin head or a little larger. There was a large gland below the lobe of the right ear and beneath that a smaller gland. The postcervical glands on the left side were enlarged. The spleen was palpable, the liver was not enlarged. The patient lost 45 pounds (20.4 Kg.) during the year before presentation. The tonsils were infected, and removal was advised. The Wassermann reaction was negative.

DISCUSSION

DR. WEIDMAN: I do not think that there is any doubt that this case belongs in the group of lymphoblastomas and that infiltration of round cells is taking place extensively in the skin, although the lesions thus far are small. The cutaneous lesions cannot be regarded as due to the effect of scratching. I do not think that there is any doubt that these are true infiltrations in the skin. I think that we are all agreed that the prognosis is grave. I suppose that the real issue to be discussed here from the technical standpoint is the precise form of lymphoblastoma to which this case belongs, whether it is Hodgkin's disease or beginning true leukemia cutis. Against the diagnosis of Hodgkin's disease is the presence of a true generalized adenopathy — lesions in the axillae which are too large to be explained by the cutaneous lesions on the arms. The fact that the lesions began in this massive way in the mediastinum indicates Hodgkin's disease. I must say, however, that the tendency to generalized involvement suggests leukemia cutis. I saw a case of leukemia cutis in a child, for instance, in which necropsy showed the largest primary lesions to be in the peribronchial regions. The lymphocytic count in this patient does not show a disproportion of lymphocytes. In some of the hair follicles, a separative process is present, which the biology may explain.

DR. WRIGHT: I talked with this patient a few days before presentation. She consented to the removal of a gland.

DR. SCHAMBERG: The most conservative diagnosis would be an itching papular eruption associated with pseudoleukemia. If this were a true leukemid, the lesions would show characteristic changes on microscopic section.

SYCOSIFORM SEBORRHEIC DERMATITIS. Presented by DR. BRIGLIA from DR. SCHAMBERG'S clinic.

A watchman, aged 27, who was presented eight or nine months ago, is presented again to show the beneficial influence of staphylococcic filtrate. Under the administration of staphylococcic filtrate, he recovered completely and was discharged three months before presentation. He returned to the hospital with a slight recurrence of the condition and was given another course of filtrates. Applications of tar ointment were helpful.

DISCUSSION

DR. WEIDMAN: Is this the case of the man with otorrhea?

DR. SCHAMBERG: This patient shows a great degree of improvement. I have seen him from time to time in the hospital. The case that Dr. Weidman referred to, a man with an obstinate sycosiform condition affecting the face, scalp, eyebrows and pubis, with a profuse discharge from the ears, in which a pure culture of bacillus proteus was found, likewise made a great improvement after the administration of filtrates. I have felt for some years that we were not getting the results from vaccines that we should have obtained. Staphylococcic filtrates seem to be valuable in some of these pyogenic infections; the heat ordinarily used to destroy the bacteria likewise destroys the toxin in vaccines. Whether it is a toxin or something else in the filtrate that gives better results is not definite. I think, therefore, that Dr. Greenbaum uses the term wisely when he speaks of staphylococcic filtrate rather than toxin.

PARAPSORIASIS. Presented by DR. STRAUSS.

A man, aged 27, had a rather generalized eruption of about two and one-half years' duration. The entire trunk and extremities showed numerous patches varying in size from that of a pea to that of a small orange. These lesions were somewhat inflammatory and superficial and showed a fine white scale. Infiltration did not occur on palpation.

DISCUSSION

DR. SCHAMBERG: I think that the case presents a fairly good picture of pityriasis en plaque disseminé, or parapsoriasis. The older patches are pigmented, the more recent ones markedly scaly, showing dilatation of the blood vessels and slight atrophy. The fact that there is no itching, and that the entire condition has lasted for two years seems to justify this classification.

DR. WEIDMAN: I agree with the diagnosis. I cannot say that I am impressed with the amount of pigmentation in the regressing lesions. I have never seen this in other cases of parapsoriasis. I wonder whether there is any connection between the general pigmentation and pigmentary nevus which the patient also has, and the abnormal pigmentation in the regressing lesions.

DR. STRAUSS: I have seen this pigmentary change coming on gradually. Under treatment by ordinary methods and by the x-rays it did not show any change. Under the quartz lamp, there was no change. I have been giving the patient gold and sodium thiosulphate and noticed a change during the month before presentation, in that the red lesions were quickly becoming darkly pigmented and the lesions on the arms became much lighter. This may have been a coincidence, but the patient did not yield to any other form of treatment.

GENERALIZED SCLERODERMA. Presented by DR. GUEQUIERRE (from the service of DR. ROUSSEL).

A seamstress, aged 17, unmarried, was admitted to the Graduate Hospital on Sept. 12, 1928, complaining of stiffness of the joints. It was noticed that the skin had a peculiar drawn appearance.

DISCUSSION

DR. WEIDMAN: The disease seems to be under the skin rather than in the skin itself. Of course, if the condition is scleroderma it must be of the deep variety, which brings it close to the category of dermatomyositis. It does not appear that this is a disease of the fatty tissues, as in scleroderma. It seems to be a deep scleroderma or dermatomyositis.

DR. SCHAMBERG: I concur in the diagnosis of scleroderma. I rather fear that this is going to be a case of rapid progression, judging from its growth in four months; the forearms, chest and face are already involved, which is not a favorable augury.

SEBORRHEIC DERMATITIS. Presented by DR. KLAUDER.

A student, aged 23, presented nonpruritic pale pink, slightly scaly and elevated patches the size of a pinhead and much larger on the checks and neck.

DISCUSSION

DR. WEIDMAN: It is remarkably symmetrical, and extremely pallid. Did the eruption look like this when it began?

DR. KLAUDER: It has not been treated.

DR. WEIDMAN: It seems infiltrated to me; it does not appear to be the essentially superficial lesion one would expect in a seborrheic dermatitis. It seems more pallid than the sound skin around it, and I was wondering whether this could be similar to a case of ringed eruption shown and re-shown by Dr. Corson, in which the patch occurred around the ear spread peripherally and cleared centrally.

DR. WRIGHT: I consider this a case of seborrheic eczema. I should like to have Dr. Greenbaum report next month on the effect of roentgen therapy on this condition. I think it will respond rapidly.

DETROIT DERMATOLOGICAL SOCIETY

H. J. PARKHURST, M.D., *Reporter*

Regular Meeting, Oct. 16, 1928

GEORGE VAN RHEE, M.D., *Presiding*

A CASE FOR DIAGNOSIS. Presented by DR. VALADE.

Mrs. C. T., a negress, aged 56, presented a generalized eruption of bullae in various stages, the condition being of two years' duration. There had been some lesions in the mouth. She was presented before the society in February, 1927 (reported in the ARCHIVES **16**:246 [Aug.] 1927), at which time a diagnosis of lupus erythematosus was favored because of the facial lesions. There was an improvement in the condition, followed by a recurrence of the lesions in March, 1928, and Nikolsky's sign was present. A biopsy report was included.

DISCUSSION

DR. KEIM: This condition is apparently the exfoliative type of pemphigus. I have never seen it in a negro.

DR. SHAFFER: This case seems to belong to the group resembling lupus erythematosus at first and later presenting the picture of pemphigus, with a chronic course.

POIKILODERMA ATROPHICANS VASCULARE (?). Presented by DR. JAMIESON.

Mrs. D. W., a widow, aged 62, first noticed an indefinite pruritic erythema on the face and trunk four or five years before presentation. These areas, small at first, gradually enlarged and coalesced until the greater part of the body surface was involved. The pruritus persisted, and the patient lost 40 pounds (18.1 Kg.) in a few months. As presented, the affected areas were erythematous, with some telangiectasia and evidences of atrophy. The hair was sparse, and its growth had been slow. There was general asthenia. The hematologic observations were normal. A biopsy examination had been made at Ann Arbor four months previously.

DISCUSSION

DR. KEIM: I saw the patient at Ann Arbor several months ago, and considered the possibility of the condition being lymphoblastoma.

DR. PARKHURST: The affected areas resemble those of roentgen atrophy. I agree with the tentative diagnosis of poikiloderma.

PITYRIASIS ROSEA PERSTANS. Presented by DR. JAMIESON.

Mrs. F. M., aged 31, presented a brown macular eruption of four months' duration, profusely distributed over the trunk, arms and thighs; there were a few lesions on the neck and face. The lesions were small and medium, the size of a coin, with central crinkling and peripheral scaling. They had appeared in repeated crops, some of the outbreaks having been accompanied by petechial patches. There was intense pruritus. Some involution had occurred. Lymph nodes were not palpable. The results of the routine laboratory examinations were normal.

DISCUSSION

DR. BREITENBACH: I am still treating a patient with a similar condition, with intense itching and repeated recurrences of six months' standing.

DR. PARKHURST: I would suggest treatment with x-rays.

DR. JAMIESON: Roentgen therapy has been given and some lesions cleared up; but there was a recurrence.

DR. VAN RHEE: I have seen a nurse with pityriasis rosea of six months' duration.

NODULAR TERTIARY SYPHILID OF THE NOSE. Presented by DR. SHAFFER.

Mrs. M. H., a white woman, aged 30, had nodules on the bulbous portion of the tip of the nose for three months. The nodules, four in number, were the size of a pea and erythematous, with a few scattered thin crusts. There was a slight dimpling of one nodule, suggesting destructive ulceration and scarring. The grouping was not definitely arciform. There was a similar nodule below the left eye. There was a slight extension of the process into the right naris, but an intranasal examination was negative. Diascopy did not show apple jelly nodules. The Wassermann reaction was strongly positive.

DISCUSSION

DR. JAMIESON: There is a marked resemblance to lupus vulgaris, but no apple jelly nodules were found.

ANNULAR PAPULAR SYPHILID. Presented by DR. PERKINS.

Mrs. W. J., aged 46, a widow, employed in a check room, presented an eruption of small and medium, flat, annular papules, the size of a coin, with depressed centers, about the brow of six weeks' duration. The Wassermann reaction had not yet been reported.

A Case for Diagnosis. Presented by Dr. Shaffer.

C. T., a boy, aged 17, had an eruption for several weeks. On the left side of the chest, right groin and penis were several slate-colored lesions of urticarial type, the size of a split pea and larger. There were fifteen of these wheal-like papules and all had been present for at least two weeks. There was no central depression of the lesions. Drugs had not been taken.

DISCUSSION

Dr. Bartholomew: The lesions are suggestive of sarcoids of the Boeck type.

Dr. Jamieson: The patient wore a cast for several weeks, which irritated the points affected at that time. The condition may be sarcoid.

A Case for Diagnosis. Presented by Dr. Schiller and Dr. Schlegelmilch.

E. L., a colored girl, aged 9, had a generalized eruption for several months. The eruption first appeared on the right arm one year previously. Old lesions had faded, and new ones had appeared in crops; subjective symptoms were lacking. The groins, thighs, abdomen and back were especially involved, the lesions being evenly distributed, shiny, white papules the size of a pinhead.

DISCUSSION

Dr. Parkhurst: The eruption resembles that of lichen scrofulosorum, but there is no grouping or scaling. Some of the lesions are in lines, and the shiny flat tops suggest lichen planus.

Dr. Jamieson: I suggest a diagnosis of lichen nitidus.

Dr. Shaffer: At first I considered possibilities of lichen scrofulosorum and lichen planus, but the lesions seem too small for lichen planus. I agree with a diagnosis of lichen nitidus.

A Case for Diagnosis. Presented by Dr. Shaffer.

K. D., a man, aged 32, one year before presentation had first noticed a discoloration about the nail-bed of the great toe on the right foot. With no subjective symptoms, similar areas on all excepting the fifth toe of the right foot became involved, and also the great toe on the left foot. Slate-colored areas extended for about 1 cm. proximal to the nail of each affected toe, with a few cayenne pepper spots and telangiectases. There was a slight furfuraceous scale, but no infiltration, induration or lichenification. There was no blanching under pressure, but under the Wood glass the appearance suggested a vascular rather than a pigmentary origin. The feet were said to have been frost-bitten ten years previously, but there had been no signs of pernio. There was slight hyperhidrosis of the feet, and no sign of dermatophytosis. The arteries of the feet appeared to be normal on palpation. Some purpura-like lesions about the right ankle had disappeared.

DISCUSSION

Dr. Stevens: There was some punctate pigmentation of the legs, suggesting Schamberg's disease. I found cayenne pepper spots. The condition, however, may have followed frostbite.

Leukoderma. Presented by Dr. Schiller and Dr. Schlegelmilch.

C. G., a man, aged 35, born in Malta, presented a condition of four years' duration. There were large depigmented patches involving the entire scrotum and adjacent parts of the thighs, and the trunk, face, arms, hands and legs.

PEMPHIGUS. Presented by DR. JAMIESON.

H. L., a Russian Jew, aged 32, a locksmith, had a markedly pruritic condition for ten weeks, and had observed bullae for four weeks. The trunk and the buccal mucosa were involved. There were no intact bullae, but many denuded lesions, of various sizes and shapes.

DERMATITIS PAPILLARIS CAPILLITII. Presented by DR. SCHILLER and DR. SCHLEGELMILCH.

C. V., a negro, aged 20, a student, presented a group of pustules and keloid-like nodules, covering the nucha, of two and a half years' duration. The lesions varied in size from that of a pinhead to that of a large pea, and the scars were elevated, smooth and shiny. Acne vulgaris was also present.

Book Reviews

SERUM DIAGNOSIS BY COMPLEMENT FIXATION, WITH SPECIAL REFERENCE TO SYPHILIS. THE PRINCIPLES, TECHNIQUE AND CLINICAL APPLICATIONS. By JOHN A. KOLMER, M.S., M.D., D.P.H., D.Sc., LL.D. Price, $7. Illustrated with 65 engravings. Philadelphia: Lea & Febiger, 1928.

On page 155 of this excellent work, the author writes, "The investigator in this field cannot but feel great admiration for the work of Bordet, Wassermann and other pioneers who must have conducted a great deal of research before announcing the relatively simple and highly efficient directions accompanying descriptions of their technique." The same praise can be freely bestowed on Dr. Kolmer, whose indefatigable industry and clear thought have done so much for serology. As the preface states, no attempt is made to review the enormous literature of the Wassermann reaction; but the book is devoted to the author's experimental investigations and to the methods evolved therefrom. After a short chapter on the history of the subject, he takes up in succession, the nature and mechanism of serum hemolysis, the phenomenon of complement-fixation and so on through part 1, dealing with basic principles. Parts 2 and 3 deal at length with technic from the preparation of glassware to the reading of the completed tests, including their application to gonorrhea, tuberculosis, typhoid and other bacterial diseases, the diseases of lower animals, mycotic, protozoal and metazoal diseases, the identification of bacteria, blood stains, serums and seminal stains, the titration of immune serums and the detection of adulteration in meat or milk. Part 4 deals with the clinical application of these tests.

The field is covered fully, with attention to detail, which is characteristic of all the work of this author. No conclusion or rule is given without a statement of the basis for it. In many cases the experimental work is detailed. The dedication is an unusual one, being in part devoted to "my assistants, whose names appear so frequently in the following pages." This is of especial interest to those who know of Dr. Kolmer's friendly attitude toward his subordinates and their consequent devotion to him. The book is warmly recommended to all interested in the subject, whether from a serologic or a clinical standpoint.

Directory of Dermatologic Societies *

NATIONAL DERMATOLOGIC SOCIETIES

AMERICAN DERMATOLOGICAL ASSOCIATION

Joseph Grindon, President, 4500 Olive St., St. Louis.
C. Guy Lane, Secretary, 416 Marlborough St., Boston.
Place: San Francisco. Time: July 1-3, 1929.

SECTION ON DERMATOLOGY AND SYPHILOLOGY, SCIENTIFIC ASSEMBLY, AMERICAN MEDICAL ASSOCIATION

Jay Frank Schamburg, Chairman, 1402 Spruce St., Philadelphia.
William H. Guy, Secretary, Jenkins Arcade, Pittsburgh.
Place: Portland, Ore. Time: July 8-12, 1929.

BRITISH ASSOCIATION OF DERMATOLOGY AND SYPHILOLOGY (CANADIAN BRANCH)

D. King Smith, President, 122 Bloor St. West, Toronto.
E. J. Trow, Secretary, 122 Bloor St. West, Toronto.

LOCAL DERMATOLOGIC SOCIETIES

DERMATOLOGIC SECTION, LOS ANGELES COUNTY MEDICAL ASSOCIATION

Irving R. Bancroft, Chairman, 412 W. 6th St., Los Angeles.
Louis F. X. Wilhelm, Secretary, 1401 S. Hope St., Los Angeles.

SAN FRANCISCO DERMATOLOGICAL SOCIETY

Ernest Chipman, President, 350 Post St., San Francisco.
H. J. Templeton, Secretary, 3115 Webster St., Oakland.

ATLANTA DERMATOLOGICAL SOCIETY

Jack W. Jones, President, Medical Arts Bldg., Atlanta, Ga.
Francis Jones, Secretary, Medical Arts Bldg., Atlanta, Ga.

CHICAGO DERMATOLOGICAL SOCIETY

F. E. Senear, President, 55 E. Washington St., Chicago.
E. A. Oliver, Secretary, 55 E. Washington St., Chicago.

LOUISIANA DERMATOLOGICAL SOCIETY

Ralph Hopkins, President, 124 Barome St., New Orleans.
Thomas A. Maxwell, Secretary-Treasurer, 1119 Union Indemnity Bldg., New Orleans.

BALTIMORE AND WASHINGTON DERMATOLOGICAL SOCIETY

Lloyd W. Ketron, President, Medical Arts Bldg., Baltimore.
Leon Ginsburg, Secretary, 1800 N. Charles St., Baltimore.

---

* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

DETROIT DERMATOLOGICAL SOCIETY

George Van Rhee, President, 10 Peterboro St., Detroit.
Ralph A. Perkins, Secretary, 276 Erskine St., Detroit.

MINNESOTA DERMATOLOGICAL SOCIETY

W. Goeckerman, President, Mayo Clinic, Rochester, Minn.
D. D. Turnacliff, Secretary, Yeates Bldg., Minneapolis.

ST. LOUIS DERMATOLOGICAL SOCIETY

Robert H. Davis, President, Missouri Bldg., St. Louis.
Norman Tobias, Secretary, Missouri Bldg., St. Louis.

NEW ENGLAND DERMATOLOGICAL SOCIETY

C. Guy Lane, President, 416 Marlborough St., Boston.
Arthur M. Greenwood, Secretary, 416 Marlborough St., Boston.

BRONX DERMATOLOGICAL SOCIETY

Benjamin F. Ochs, Chairman, 865 West End Ave., New York.
Raphael Breakstone, Secretary-Treasurer, 783 Beck St., New York.

BROOKLYN DERMATOLOGICAL SOCIETY

W. H. Best, President, 1198 Bushwick Ave., Brooklyn.
A. M. Persky, Secretary, 1750 Ocean Parkway, Brooklyn.

MANHATTAN DERMATOLOGICAL SOCIETY

Mihran B. Parounagian, Chairman, 126 E. 39th St., New York.
David L. Satenstein, Secretary, 116 W. 58th St., New York.

SECTION ON DERMATOLOGY AND SYPHILIS, NEW YORK ACADEMY OF MEDICINE

Isadore Rosen, Chairman, 330 Park Ave., New York.
Ray Hoskins Rulison, Secretary, 145 E. 54th St., New York.

NEW YORK DERMATOLOGICAL SOCIETY

Howard Fox, President, 114 54th St., New York.
Paul E. Bechet, Secretary, 30 E. 40th St., New York.

SECTION ON DERMATOLOGY AND SYPHILOLOGY, MEDICAL SOCIETY OF THE STATE OF NEW YORK

Jerome Kingsbury, President, Seventh Ave. and 55th St., New York.
Louis Tulipan, Secretary, 224 E. 17th St., New York.

CINCINNATI DERMATOLOGICAL SOCIETY

E. B. Tauber, President, 19 W. 7th St., Cincinnati.
H. L. Claassen, Secretary, Provident Bank Bldg., Cincinnati.

CLEVELAND DERMATOLOGICAL SOCIETY

C. G. LaRocco, President, Schofield Bldg., Cleveland.
James R. Driver, Secretary, Hanna Bldg., Cleveland.

OKLAHOMA DERMATOLOGICAL ASSOCIATION

Everett S. Lane, President, Oklahoma City.
C. J. Woods, Secretary, Tulsa.

PHILADELPHIA DERMATOLOGICAL SOCIETY

Sigmund S. Greenbaum, President, 1714 Pine St., Philadelphia.
Carroll S. Wright, Secretary, 1402 Spruce St., Philadelphia.

PITTSBURGH DERMATOLOGICAL SOCIETY

George J. Busman, Chairman, Union Trust Bldg., Pittsburgh.
Howard T. Phillips, Secretary, National Exchange Bank Bldg., Wheeling, W. Va.

Index to Current Literature

DERMATOLOGY

Accessory Spleens: Significance in Essential Thrombocytopenic Purpura Hemorrhagica. M. Morrison, M. Lederer and W. Z. Fradkin, Am. J. M. Sc. **176**:672 (Nov.) 1928.

Actinic Measurement of Solar Ultraviolet Rays and Some Correlations with Erythema Dose. F. O. Tonney, P. P. Somers and W. C. Marti, J. Prev. Med. **2**:493 (Nov.) 1928.

Acute Leukemia with Aplastic Anemia and Skin Nodule. Dumitresco-Mante, Arch. d. mal. du coeur **21**:593 (Sept.) 1928.

Appendicitis Complicating Measles. H. Burckhardt, Zentralbl. f. Chir. **55**:2693 (Oct. 27) 1928.

Argyria. A. W. Stillians and T. K. Lawless, J. A. M. A. **92**:20 (Jan. 5) 1929.

Atypical Proliferation of Skin Epithelium During Aseptic Inflammation Caused by Cholesterol and Animal Charcoal. W. Garschin, Ztschr. f. Krebsforsch. **27**:481 (Sept. 22) 1928.

Bactericidal Power of Skin, Hair and Cerumen. G. Brann, Klin. Wchnschr. **7**: 2059 (Oct. 21) 1928.

Basal Metabolism and Specific Dynamic Action of Protein in Therapeutic Malaria. K. Bahn and Langhans, Klin. Wchnschr. **7**:2062 (Oct. 21) 1928.

Blastomycosis. I. D. Michelson, J. A. M. A. **91**:1871 (Dec. 15) 1928.

Bone Changes in Leprosy. R. Hopkins, Radiology **11**:470 (Dec.) 1928.

Case of Blastomycosis of Skin (Gilchrist). N. M. Levchanovskiy, Klin. J. Saratov. Univ. **5**:479 (April) 1928.

Case of Gumma Sclera. H. Meves, Dermat. Wchnschr. **87**:1288 (Sept. 15) 1928.

Case of Lupus of Nose Simulating Epithelioma with Tuberculous Caseation of Suprarenal Gland and Addison's Syndrome. P. Ciuffini, Riforma med. **44**: 1244 (Sept. 24) 1928.

Colloidal Lead and Irradiation in Cancer. H. J. Ullmann, J. A. M. A. **92**:18 (Jan. 5) 1929.

Colloidal Lead with Roentgen Therapy in Malignant Disease. C. A. Waters, J. A. C. Colston and L. N. Gay, J. A. M. A. **92**:14 (Jan. 5) 1929.

Combating Leprosy. F. de Mello, Med. Welt **2**:1612 (Oct. 27) 1928.

Cryotherapy in Leprosy. K. Jarysheva, Klin. J. Saratov. Univ. **5**:43 (Jan.) 1928.

Dermatitis Caused by Tree Poison. E. von Bassewitz, Arch. f. Schiffs- u. Tropen-Hyg. **32**:494 (Oct.) 1928.

Dermatologic Indications for Souttar's Cautery. H. C. Semon, Brit. M. J. **2**:840 (Nov. 10) 1928.

Diagnosis of Smallpox and Chickenpox. A. Faller, Ohio State M. J. **24**:958 (Dec.) 1928.

Diathermic Treatment of Ulcerative Roentgen and Radium Dermatitis. H. Bordier, Paris méd. **2**:402 (Nov. 10) 1928.

Distribution of Skin Icterus. F. Kovács, Wien. klin. Wchnschr. **41**:1456 (Oct. 18) 1928.

Endothermy Versus Roentgen Ray and Radium in Treatment of Neoplastic Diseases of Skin and Mucous Membrane. New York State J. Med. **28**:1331 (Nov. 15) 1928.

Epidemiology of Measles. M. Klotz, Klin. Wchnschr. **7**:2116 (Oct. 28) 1928.

Etiology of Dermatitis of Experimental Pellagra in Rats. W. D. Salmon, I. M. Hays and N. B. Guerrant, J. Infect. Dis. **43**:426 (Nov.) 1928.

Etiology, Prophylaxis and Treatment of Measles. S. A. Kuliabko, Klin. J. Saratov. Univ. **5**:159 (Feb.) 1928.

Exanthematous Fever of Mediterranean Coast. Boinet, J. Piéri and Dunan, Presse méd. **36**:1377 (Oct. 31) 1928.

Five Cases of Exfoliative Erythrodermia with Cure. P. Unna, Jr., Dermat. Wchnschr. **87**:1263 (Sept. 15) 1928.
Five Cases of Exfoliative Erythrodermia with Cure. P. Unna, Jr., Dermat. Wchnschr. **87**:1317 (Sept. 22) 1928.
Fungal Infections of Perianal Skin and Rectum. E. H. Terrell and F. W. Shaw, South. M. J. **21**:887 (Nov.) 1928.
Furuncles and Carbuncles. H. Heinlein, München. med. Wchnschr. **75**:1707 (Oct. 5) 1928.

Herpes Zoster (Intercostal) and Intercostal Neuralgia Relieved by Sphenopalatine Ganglion Treatment. S. L. Ruskin, Laryngoscope **38**:729 (Nov.) 1928.
Hinton Glycerol-Cholesterol Precipitation Test: As Means of Indicating Necessity of Continued Treatment. A. W. Cheever and R. L. Splaine, New England J. Med. **199**:973 (Nov. 15) 1928.
Histology of Skin of Axilla. C. L. Kerrenberg, Dermat. Wchnschr. **87**:1275 (Sept. 15) 1928.
Histology of Skin of Axilla. C. L. Karrenberg, Dermat. Wchnschr. **87**:1321 (Sept. 22) 1928.

Impetigo Neonatorum: Control and Treatment. O. R. Chadwell, New England J. Med. **199**:983 (Nov. 15) 1928.
Infantile Eczema: Causes and Treatment. B. Bashinski, J. M. A. Georgia **17**:497 (Nov.) 1928.
Influence of Barometric Pressure, Temperature and Air Humidity on Erysipelas. S. A. Nekrassov, Klin. J. Saratov. Univ. **5**:543 (May) 1928.
Influence of Sunlight on Skin Reaction to Tuberculin. G. Genoese, Policlinico **35**:1343 (July 16) 1928.
Interdigital Ringworm Control Among Students. W. B. Sharp and E. K. Taylor, J. Prev. Med. **2**:485 (Nov.) 1928.
Intradermal Vaccinations with B C G Virus: Preliminary Note. Arvid Wallgren, J. A. M. A. **91**:1876 (Dec. 15) 1928.

Krysolgan in Treatment of Lupus Erythematosus: Twenty-Eight Cases. W. H. Goeckerman, Ann. Int. Med. **2**:428 (Nov.) 1928.

Lichen Ruber and Similar Arsphenamine and Arsenic Exanthemata as an Example of the Homeopathic Dictum: Similia Similibus. A. Buschke and W. Curth, München. med. Wchnschr. **75**:1794 (Oct. 19) 1928.
Lupus Erythematosis. N. E. Aronstam and J. L. Rosefield, J. Michigan M. Soc. **27**:807 (Dec.) 1928.

Mercurochrome and Iodine in Skin Disinfection. W. W. Scott, J. H. Hill and M. G. Ellis, J. A. M. A. **92**:111 (Jan. 12) 1929.
Miliary Tuberculosis of the Skin. E. J. Meijers, Nederl. Maandschr. v. Geneesk. **15**:346, 1928.

Occupational Skin Injuries. M. Oppenheim, Wien. klin. Wchnschr. **41**:1490 (Oct. 25) 1928.

Parathyroid B Infection with Purpura and Specific Bronchopneumonia: Case. H. P. Jameson and A. Signy, Arch. Dis. Child. **3**:238 (Oct.) 1928.
Peculiar Skin Reaction Caused by Blood. R. Rössle, München. med. Wchnschr. **75**:1789 (Oct. 19) 1928.
Pemphigoid of the New-Born and Exfoliative Pemphigoid. W. Pockels, Dermat. Wchnschr. **87**:1279 (Sept. 15) 1928.
Pemphigoid of the New-Born and Exfoliative Pemphigoid. W. Pockels, Dermat. Wchnschr. **87**:1323 (Sept. 22) 1928.
Penetration of Skin by Ultraviolet Rays. L. Hill, Brit. J. Actinotherapy **3**:147 (Nov.) 1928.
Physical Therapeutic Treatment of Common Skin Diseases. J. M. Troutt and H. A. Bibson, Mil. Surgeon **63**:816 (Dec.) 1928.
Primary Exogenous Tuberculous Infection of Nasal Mucous Membrane: Immunization. P. Wichmann, Dermat. Wchnschr. **87**:1282 (Sept. 15) 1928.

Scleroderma with Report and Presentation of Patient with Generalized Type of Disease. J. M. Anderson, J. Florida M. A. **15**:241 (Nov.) 1928.
Scurvy, Pellagra and Sprue at Boston City Hospital. G. C. Shattuck, New England J. Med. **199**:986 (Nov. 15) 1928.
Seven Cases of Resistant Psoriasis. L. McCarthy, Virginia M. Monthly **55**:545 (Nov.) 1928.
Skin Irritation Under Ultraviolet Radiation. S. Van S. Boyd, Lancet **2**:1076 (Nov. 24) 1928.
Skin Plastics: Types and Indications. W. R. Mechtenberg, Nebraska M. J. **13**:454 (Dec.) 1928.
Skin Sensitiveness to Substances Having Structure of Quinone. R. L. Mayer, Klin. Wchnschr. **7**:1958 (Oct. 7) 1928.
Skin Sensitivity of Rheumatic Subjects to Streptococcus Filtrates: Relationship to Rheumatic Fever. E. I. M. Irvine-Jones, Arch. Int. Med. **42**:784 (Nov.) 1928.
Smallpox Vaccination. R. D. Defries and N. E. McKinnon, Canad. M. A. J. **19**:525 (Nov.) 1928.
Sugar Content of Skin in Physiologic and Pathologic States. E. Urbach and G. Sicher, Wien. klin. Wchnschr. **41**:1481 (Oct. 25) 1928.

Telangiectatic Granuloma. E. Delbanco, Dermat. Wchnschr. **87**:1268 (Sept. 15) 1928.
Thyroid and Skin Grafts in Sensitized Animals. L. Carmona, Arch. ital. di chir. **21**:436 (June) 1928.
Treatment and Prophylaxis of Scarlet Fever with Specific Antitoxic Serum. J. C. B. Craig, Lancet **2**:1123 (Dec. 1) 1928.
Treatment of Carbuncle with High Frequency Current. A. D. Willmoth, Arch. Physical Therapy **9**:486 (Nov.) 1928.
Treatment of Eczema by General Practitioner. Naegeli, Schweiz. med. Wchnschr. **58**:1041 (Oct. 20) 1928.
Treatment of Malignant Neoplasms with Colloidal Lead. D. S. Pulford and J. D. Lawson, Am. J. Roentgenol. **20**:456 (Nov.) 1928.
Treatment of Scarlet Fever with Behring Serum. W. Sauer and J. Schmitz, München. med. Wchnschr. **75**:1829 (Oct. 26) 1928.
Two Cases of Vaccine Exanthem. M. Kourochkin, Klin. J. Saratov. Univ. **5**:491 (April) 1928.

Ultraviolet Ray and Skin Cancer. G. M. Findlay, Lancet **2**:1070 (Nov. 24) 1928.
Urethral Carbuncle. A. A. Conrad, Nebraska M. J. **13**:460 (Dec.) 1928.
Urticaria: Pathogenesis and Etiology. R. Hallam, Brit. M. J. **2**:879 (Nov. 17) 1928.
Use of Certain Preparations in Leprosy. J. M. Henderson and S. P. Chatterji, Indian M. Gaz. **63**:620 (Nov.) 1928.

Value of Active Immunization Against Scarlet Fever. Guy L. Kiefer, J. A. M. A. **91**:1885 (Dec. 15) 1928.

SYPHILOLOGY

Basal Metabolism and Specific Dynamic Action of Protein in Therapeutic Malaria. K. Bahn and J. Langhans, Deutsches Arch. f. klin. Med. **161**:181 (Oct.) 1928.
Biology and Staining of Spirochaeta Pallida. C. Stern, Klin. Wchnschr. **7**:2050 (Oct. 21) 1928.

Can Wassermann Reaction be Replaced as Standard Method in Clinics? C. Bruck, Klin. Wchnschr. **7**:2060 (Oct. 21) 1928. Reply. M. Stern and T. Frank, ibid. **7**:2061 (Oct. 21) 1928.
Clinical and Radiologic Recognition of Gastric and Duodenal Syphilis. A. Pozzi, Policlinico **35**:365 (July 1) 1928.
Comparison of Wassermann and Precipitation Reactions in Pregnancy. S. S. Jones, Northwest Med. **27**:526 (Nov.) 1928.
Congenital Syphilis of Ovary. W. C. Menninger, Am. J. Syph. **12**:531 (Oct.) 1928.
Congenital Syphilis: Practical Methods of Prevention, Diagnosis and Treatment. A. J. Casselman, J. M. Soc. New Jersey **25**:623 (Oct.) 1928.

Disappearance of Spirochaeta Pallida from Tissue Juices of Primary Syphiloma of Rabbits Under Influence of Bismuth Therapy. P. V. Fomin and S. I. Pardyko, Klin. J. Saratov. Univ. **5**:21 (Jan.) 1928.

Gumma of Orbit. T. LeWin and C. White, New York State J. Med. **28**:1417 (Dec. 1) 1928.

Hemolytic Rapid Reaction in Syphilis. H. Gross, Klin. Wchnschr. **7**:2106 (Oct. 28) 1928.

Hinton Glycerol-Cholesterol Precipitation Test: Comparison with Wassermann, Kahn and Slide Tests in 1,600 Cases. A. W. Cheever and R. L. Splaine, New England J. Med. **199**:967 (Nov. 15) 1928.

Hinton Glycerol-Cholesterol Precipitation Test: Reaction: Diagnostic Criterion of Syphilis. R. L. Splaine and A. W. Cheever, New England J. Med. **199**:971 (Nov. 15) 1928.

Importance of and Diagnosis of Syphilis in Primary State. J. M. Bailey, Virginia M. Monthly **55**:547 (Nov.) 1928.

Importance of Bismuth Salts in Therapy. A. Bresser, Med. Welt **2**:1574 (Oct. 20) 1928.

Infectiousness and Serologic Reactions in Case of Latent Syphilis. Rengert, Deutsche med. Wchnschr. **54**:1803 (Oct. 26) 1928.

Involvement of Bones in Congenital Syphilis. S. Engel and Schmidt, Klin. Wchnschr. **7**:2111 (Oct. 28) 1928.

Malarial Therapy of Paresis. G. A. Young, Nebraska M. J. **13**:445 (Dec.) 1928.

Method of Elimination of Anticomplementary Result in Many Wassermann Tests. H. R. Fishback, J. Lab. & Clin. Med. **14**:176 (Nov.) 1928.

Microscope Slide Precipitation Test for Syphilis. T. Hamilton, M. J. Australia **2**:621 (Nov. 17) 1928.

Microstomia Following Syphilitic Interstitial Cheilitis. C. Bruck, Dermat. Wchnschr. **87**:1286 (Sept. 15) 1928.

Müller's Conglobation Reaction in Serodiagnosis of Syphilis. H. Gross, München. med. Wchnschr. **75**:1760 (Oct. 12) 1928.

Natural Transmissibility of Inoculation Malaria. O. Fischer, Dermat. Wchnschr. **87**:1292 (Sept. 15) 1928.

Philosophizing Regarding Late Syphilis with Idea of Developing More Stabilized Theory for Its Treatment. R. Moore, Am. J. Syph. **12**:549 (Oct.) 1928.

Positive Cord Wassermann Reactions in New-Born Infant. W. L. Funkhauser and R. W. Dickson, Am. J. Syph. **12**:542 (Oct.) 1928.

Prognostic and Therapeutic Value of Intradermal Injections of Nonspecific Proteins in Syphilis: Analysis, Criticism, Case Reports and Conclusions on Work of Drs. Dujardin and Decamps of Belgium. H. Gougerot, Am. J. Syph. **12**:487 (Oct.) 1928.

Prolonged Treatment in Neurosyphilis. H. C. Solomon and A. Berk, Am. J. Syph. **12**:445 (Oct.) 1928.

Radiographic Manifestations of Syphilitic Diseases of Bone. L. R. Sante, Am. J. Syph. **12**:510 (Oct.) 1928.

Results from Use of Bismarsen in Tabes Dorsalis. N. Tobias, Am. J. Syph. **12**:536 (Oct.) 1928.

Spirochaeta Pallida in Brain in Paresis. C. G. Aars, Nederl. Maandschr. v. Geneesk. **15**:207, 1928.

Syphilis. R. E. Jameson, Am. J. Syph. **12**:559 (Oct.) 1928.

Syphilis of the Lungs. J. Hekman, Nederl. Tijdschr. v. Geneesk. **72**:4754 (Sept. 29) 1928.

Syphilis of Prostate: Case. L. W. Riba, Am. J. Syph. **12**:528 (Oct.) 1928.

Syphilis of Stomach: Certain Diagnostic Criteria. H. A. Singer and F. G. Dyas, Arch. Int. Med. **42**:718 (Nov.) 1928.

Syphilis of Stomach: Three Cases. J. G. Murray, J. South Carolina M. A. **24**:254 (Nov.) 1928.

Syphilitic Affections of Eye. M. Cohen, Am. J. Syph. **12**:517 (Oct.) 1928.

Syphilitic Infection from Cadavers. P. S. Grigoriev and K. G. Jarysheva, Klin. J. Saratov. Univ. **5**:83 (Feb.) 1928.

Tertiary Syphilitic Symptoms After Therapeutic Malaria. H. Ritter, Dermat. Wchnschr. **87**:1290 (Sept. 15) 1928.

Uncommon Ill Effects of Arsphenamine Treatment. W. J. O'Donovan, Brit. M. J. **2**:742 (Oct. 27) 1928.

Uniform Results with Wassermann Test. E. H. Ruediger, Am. J. Syph. **12**:544 (Oct.) 1928.

THE ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY is published by the American Medical Association to stimulate research and to disseminate knowledge in these departments of medicine.

Manuscripts for publication, books for review and correspondence relating to the editorial management should be sent to Dr. [illegible], Editor-in-Chief, 7 West Madison Street, Chicago, or to any other [illegible] Editorial Board. Communications regarding subscriptions, discontinuances, etc., should be addressed, ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, American Medical Association, 535 North Dearborn Street, Chicago.

Articles are accepted for publication on condition that they are contributed solely to the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY. Manuscripts must be typewritten, preferably double space, and the original copy only should be submitted. Zinc etchings and halftones of illustrations will be supplied by the Association when the original illustrations warrant.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus published by the American Medical Association. This requires, in order given, name of author, title of article, name of publication with volume, page, month—[illegible] of month if weekly—and year. A complete list of abbreviations for standard periodicals, together with a full discussion of the style of the A. M. A. publications, appears in The Art and Practice of Medical Writing, a comprehensive book on the preparation of medical manuscripts published by the American Medical Association. Price, $3.50.

Matter appearing in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY is covered by copyright. [illegible] as a rule, no objection will be made to its reproduction in reputable medical journals, if proper credit is given. However, the reproduction for commercial purposes of articles appearing in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, or in any of the other publications issued by the Association, will not be permitted.

Authors will receive one hundred reprints free; additional reprints may be obtained at cost.

The ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY is published monthly. Annual subscription price (two volumes): Domestic, $6.00; Canadian, $6.40; foreign, $6.75. Single copies, 85 cents; foreign, $0.75, including postage. Single copies, 85 cents postpaid.

Checks, etc., should be made payable to the AMERICAN MEDICAL ASSOCIATION.

OTHER PERIODICAL PUBLICATIONS

of the American Medical Association

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION—Weekly. Devoted to the medical sciences and matters of general medical interest. Illustrated. Annual subscription price (two volumes): Domestic, $5.00; Canadian, $5.50; foreign, $7.00. Single copies, 20 cents.

ARCHIVES OF INTERNAL MEDICINE—Monthly. Devoted to the publication of advanced, original clinical and laboratory investigations in internal medicine. Illustrated. Annual subscription price (two volumes): Domestic, $6.00; Canadian, $6.40; foreign, $6.75. Single copies, 75 cents.

ARCHIVES OF NEUROLOGY AND PSYCHIATRY—Monthly. A medium for the presentation of original articles on nervous and mental diseases, with abstracts, reviews and selection of current literature, society transactions, etc. Illustrated. Annual subscription price (two volumes): Domestic, $6.00; Canadian, $6.40; foreign, $6.75. Single copies, 85 cents.

AMERICAN JOURNAL OF DISEASES OF CHILDREN—Monthly. Presents pediatrics as a medical science and as a special section. It includes carefully prepared [illegible] abstracts based on recent pediatric literature, abstracts from foreign and [illegible] journals, book reviews, society transactions, etc. Illustrated. Annual subscription price (two volumes): Domestic, $5.00; Canadian, $5.50; foreign, $6.75. Single copies, 75 cents.

ARCHIVES OF SURGERY—Monthly. Devoted largely to the investigative and clinical phases of surgery, with monthly reviews on orthopedic and [illegible] surgery. Well illustrated. Annual subscription price (two volumes): Domestic, $6.00; Canadian, $6.40; foreign, $6.75. Single copies, 85 cents.

ARCHIVES OF OTOLARYNGOLOGY—Monthly. A medium for the presentation of original articles on diseases of the ear, nose and throat, with abstracts from foreign and domestic literature, book reviews, the transactions of special societies, etc. Illustrated. Annual subscription price (two volumes): Domestic, $6.00; Canadian, $6.40; foreign, $6.75. Single copies, 75 cents.

ARCHIVES OF PATHOLOGY—Monthly. A periodical devoted to the publication of original contributions in the field of pathology, with abstracts from foreign and domestic literature, book reviews, the transactions of special societies, etc. Illustrated. Annual subscription price (two volumes): Domestic, $8.00; Canadian, $8.60; foreign, $9.00. Single copies, 75 cents.

ARCHIVES OF OPHTHALMOLOGY—Monthly. Includes original articles on diseases of the eye, abstracts from foreign and domestic literature, book reviews, transactions of special societies, etc. Illustrated. Annual subscription price (two volumes): Domestic, $6.00; Canadian, $6.40; foreign, $6.75. Single copies, 85 cents.

QUARTERLY CUMULATIVE INDEX MEDICUS—Quarterly. A [illegible] subject and author index to the world's current medical literature [illegible] times a year. Second and fourth numbers bound for permanent reference. [illegible] calendar year: Domestic, $12.00; Canadian, $12.80; foreign, $13.50.

AMERICAN MEDICAL ASSOCIATION

535 North Dearborn [illegible] CHICAGO

CONTENTS

PAGE

The Role of Idiosyncrasy and Allergy in Dermatology. Bruno Bloch, M.D., Zurich, Switzerland 175

Clinical Aspects of Allergy in Dermatology. Joseph V. Klauder, M.D., Philadelphia 198

Cutaneous Neurosis: Report of Case of Genital Self-Stimulating Keloid. Werner W. Greenbaum, M.D., and Abe Arbor Mich. 226

Parathychia: An Attempt to Evaluate Etiologic Factor in an Epidemic Among Cotton Workers. H. Sutherland-Campbell, M.D., Los Angeles 233

Dermatomyositis: A Clinicopathologic Study; Report of a Case with Complete Necropsy. Charles Davison, M.D., Pittsburgh 255

Dermatomyositis or Scleroderma? Report of a Case. William Allan, M.D., Charlotte, N. C. 265

Liquid Oxygen in Dermatology. H. E. Bevier, M.D., and D. D. Thrasher, M.D., Indianapolis 270

The Use of Parathyroid Extract in Lichen Planus. Theodore Cornbleet, M.D., Chicago 281

Editorial:

Granulomas and Diabetes 284

Abstracts from Current Literature 286

Society Transactions:

Manhattan Dermatological Society 299

Cleveland Dermatological Society 309

Cuba Dermatological Association 318

Pittsburgh Dermatological Society 324

Minnesota Dermatological Society 327

Philadelphia Dermatological Society 331

Detroit Dermatological Society 334

Book Reviews 338

Directory of Dermatologic Societies 339

Index to Current Literature 342